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EXHIBITION NUMBER

September 5th, 1899

Farming

A Paper for
Farmers and Stockmen



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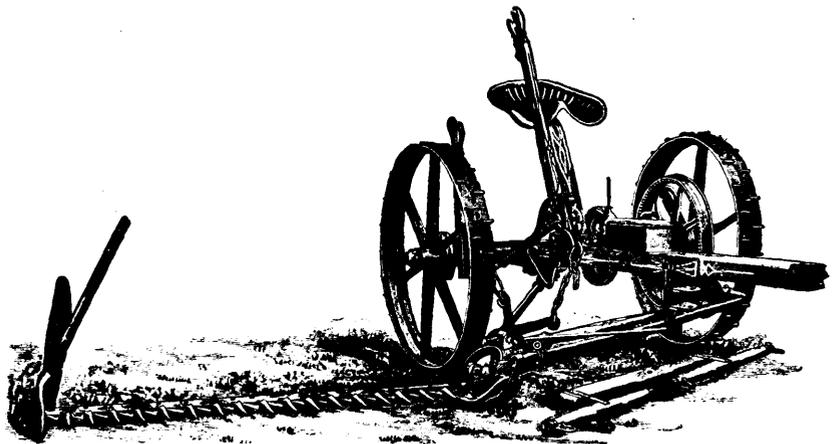
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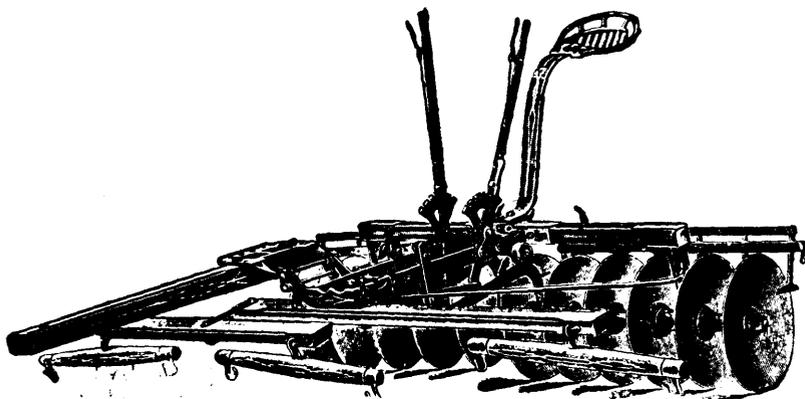
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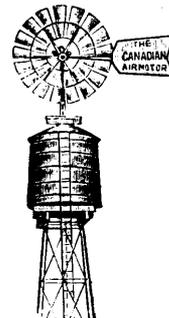
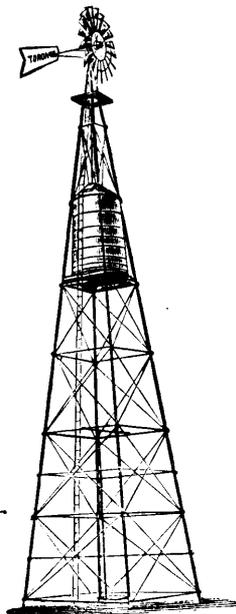
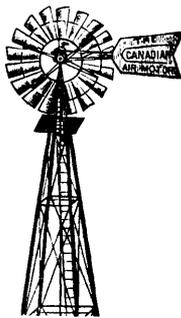
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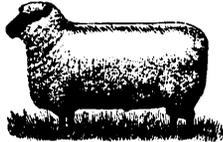
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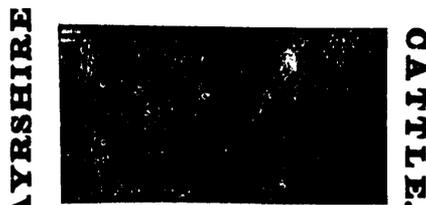
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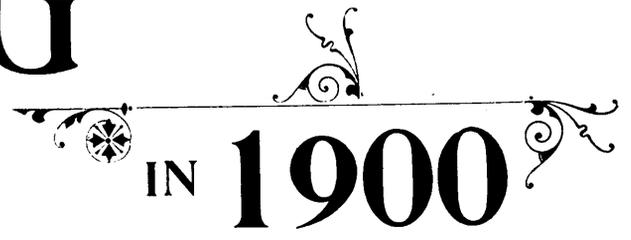
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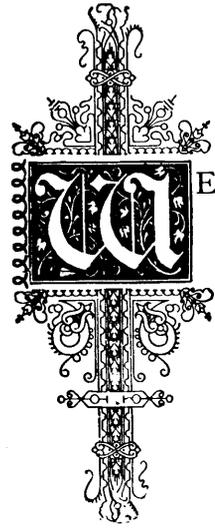
FARMING



IN 1900

Valuable Premiums for Readers of FARMING.
Things Useful and Pleasing for Present and Prospective Subscribers.

Onward Movement of the New Century...



WE have reason to believe that FARMING during the year now closing has made itself more liked by subscribers than during any period in its very successful history.

In some ways it would seem unnecessary to offer to those who know the paper well, and appreciate its weekly coming, any supplementary inducement to continue on its lists. But we value the good-will of those who are already our friends, and for that reason in the story that follows of our premium offers for 1899-1900 the opportunity is to those now on the lists as well as the many others who, we believe, will be added within the next few months.

Those who are readers of FARMING may be expected to wish that their friends were likewise subscribers to so excellent a paper. We naturally look to them for help in the year ahead, and the inducements we offer present subscribers to use their influence to secure new subscribers will repay them, we are sure, for the time necessary for the work, besides the satisfaction of knowing that they are adding to the list of readers of a paper of the practical purpose of FARMING.

We would like to think that every present subscriber of FARMING will consider himself and herself a special representative of the paper and that they will resolve with the least possible delay to send us one or more new subscribers.

FARMING SENT FREE

Persons Subscribing to FARMING in September, October, November, or December will receive the paper FREE from the time their subscription reaches our office until January 1st, 1900, in addition to the full term for which they shall subscribe.

Particulars of Our New Premium Offer

We ask that the following pages be read with care, that there may be no misinterpreting the plan we have mapped out in giving premiums. We have aimed to make every statement plain—that he who runs may read.

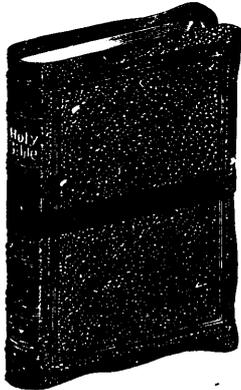
In the selection of articles for premiums we have been exceedingly careful, and our guarantee is behind every statement made of each specific article.

Particulars of our New Premium Offer



A POPULAR PREMIUM

The Oxford Workers' Bible



Will cost you only 75c. if you are a subscriber to Farming. The regular price is \$2.50.

THE Oxford Workers' Bible is an entirely new book, printed from new plates, on the famous Oxford thin paper, containing the Old and New Testaments, with References, Bible Helps, Maps, etc. This book is made by the Oxford University Press, London, Eng., to meet the growing demand for a thoroughly up-to-date comprehensive book for teachers and students, and containing such helps to the study of the Bible as are found of value in actual use from day to day.

This splendid volume is convenient in size, is bound in Levant Morocco, linen-lined, with round corners and red undergold edges. It is printed from large, clear, new Minion type. Size, 5 x 7 1/2 inches. Regular price, \$2.50.

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1. The Title of the Bible.
2. The Canon of Scripture.
3. Language of the Old and New Testaments
4. Itinerary of the Israelites to the Land of Canaan.
5. Miracles in the Old Testament.
6. Parables in the Old Testament.
7. Special Prayers in the Old Testament.
8. The Patriarchs and their Descendants.
9. Chronology of the Early Period of Old Testament History.
10. Chronology of the Kings of Judah and Israel.
11. Chronology from the Captivity to the Close of the Old Testament Canon.
12. The Witness of Modern Discoveries to the Old Testament Narrative.
13. Historical Sketch of the Period between the Old and New Testaments.
14. Chronology and Harmony of the Gospels.
15. Our Lord's Miracles.
16. Our Lord's Parables.
17. Special Prayer- and Thanksgivings in the New Testament.
18. Prophecies Relating to Christ.
19. Passages from the Old Testament quoted in the New Testament.
20. References in the New Testament to Incidents Recorded in the Old Testament
21. Chronology of the Acts and Pauline Epistles.
22. St. Paul's Missionary Journeys
23. Jewish Weights, Money, Measure, and Time.
24. The Jewish Calendar—Months, Festivals, etc.
25. Dictionary of Scripture Proper Names.
26. Subject-Index to the Holy Scriptures.
27. Concordance to the Holy Scriptures.
28. Indexed Atlas to the Holy Bible.



This cut illustrates our Four-Inch Reading Glass at its full size. It also shows how clear small type appears when viewed through its lens. People whose eyesight is not strong will find this Reading Glass a great comfort.

Members of the family also will find it a source of much enjoyment in examining photographs, flowers, etc. We offer a Glass of special value and utility. Fine French glass, lens extra large size, 4 inches in diameter. Metal mountings are nickel-plated.

Specially valuable for examining seeds, insect pests, etc.

- Any Subscriber renewing his own subscription may receive the reading glass, carefully packed for mail, for only \$1.00
- Any Subscriber sending us one new subscription may receive the glass for 75c.
- Any Subscriber sending us three new subscriptions will receive the glass **Free**

Regular Price, \$2.50

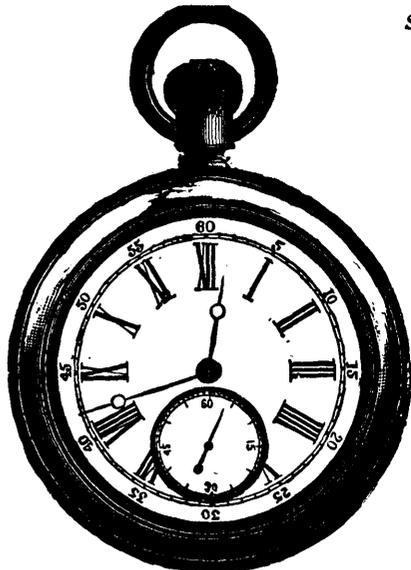
THE WORKERS' BIBLE

We look upon as one of the most valuable premiums named on these pages, and ought to be taken hold of heartily by old and new subscribers. The proposition is that every present subscriber to FARMING who will renew within the next month, and every new subscriber, can, by adding 75c. extra, receive postpaid, a copy of the Oxford Workers' Bible, regular price \$2.50, and advance the paid-up date of their subscription another year.

Farming, Toronto, Can.

Particulars OF OUR NEW Premium Offer

Valuable Premium for 15 New Subscribers



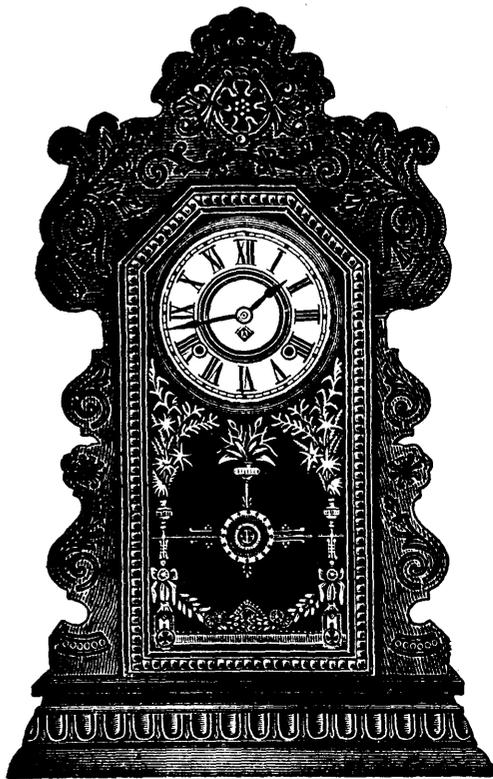
GENTLEMAN'S WATCH

in solid silver case, open face, stem wind, fitted with Waltham movement, which is a guarantee that the watch is a good time-keeper and will give satisfactory wear.

- This watch will be given free to any subscriber sending us fifteen new yearly subscribers to FARMING
- sent postpaid at our expense. Regular price of the watch is \$8.50.

Any present subscriber to FARMING can have this watch on payment of \$5.75, sent postpaid to his address.

Premium for 10 New Subscribers



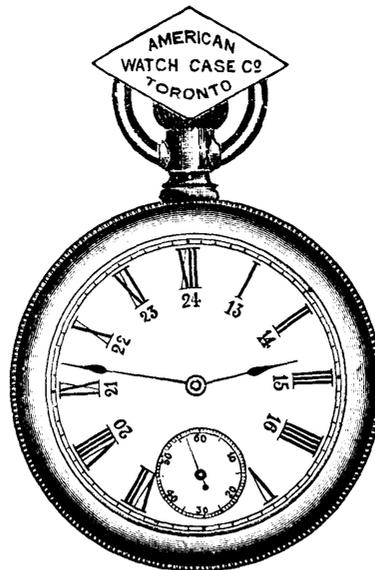
FINE EIGHT-DAY STRIKE CLOCK

height, 22½ inches; width, 14½ inches; dial, 6 inches; case in oak or dark wood as may be preferred. This is an excellent clock, that we can thoroughly recommend—handsome looking and, as a clock ought always to be, thoroughly dependable.

- This clock will be given to any subscriber sending us 10 new yearly subscribers to FARMING, carefully packed at our expense; expressage will be the only expense to be borne by the customer. This clock is regularly sold at \$5.00.

Any present subscriber to FARMING can receive this clock on payment of \$3.75.

A Watch Free for 4 New Subscribers



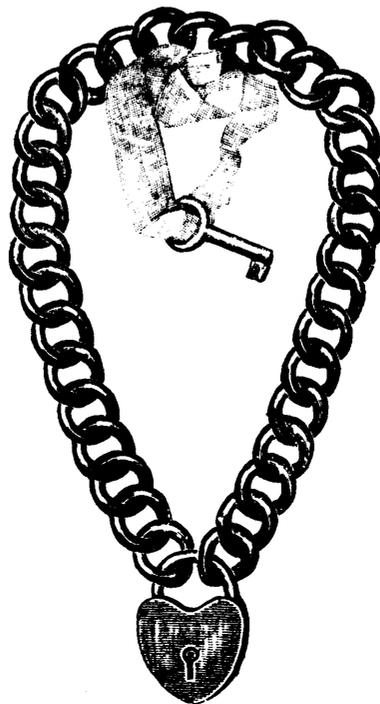
GENTLEMAN'S WATCH

nickel finished case, open face, stem wind and set. We do not say this is a full nickel watch, but it will hold its color for a year or more, whilst we can thoroughly recommend it as an accurate time-keeper. It is the watch in use among a large number of the conductors of the Toronto Street Railway, where an accurate time-keeper is a necessity.

- This watch sent postpaid to any subscriber sending four new yearly subscribers to FARMING.

It will be sent to any present subscriber on receipt of \$1.50.

Chain Bracelet for 4 New Subscribers

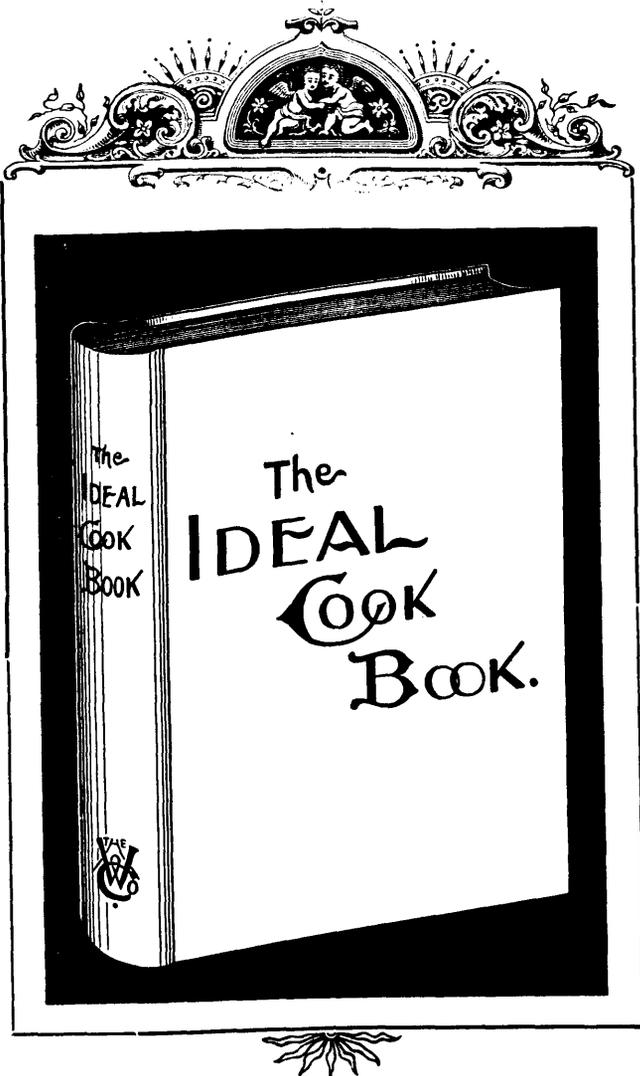


This is a guaranteed sterling silver chain bracelet, with padlock and key, neat and stylish.

- This bracelet will be sent postpaid to any subscriber sending four new yearly subscribers to FARMING.

One of these bracelets mailed postpaid to a present subscriber on receipt of \$1.50. The regular price is \$2.25.

Particulars of Our New Premium Offer



The Ideal Cook Book for Three New Subscribers

In the best sense of the term this is an Ideal Cook Book—ideal in being a practical book—a book which the housewife will want to keep constantly by her side and can depend on, because of the simplicity and reliability of every recipe. Starting with a chapter on soups, naturally the first course, throughout its three hundred pages and over there are to be found more than 1,000 recipes, winding up with an excellent chapter on sick room cookery. Following the cooking section there is a department entitled "The Doctor," in which are recipes selected from eminent authorities, and which will be found invaluable where the doctor is not readily available. The recipes are numbered throughout the book, and each is prefaced with a list of the ingredients called for by the recipe, rendering it unnecessary for the housewife to read through the entire recipe and make calculation of what is wanted. Size of page is 5 inches by 8 inches, bound in handsome oilcloth covers. It would be a mistake to confuse this book with any paper-bound cook book that would go to pieces in no time. The Ideal Cook Book cannot be had in the bookstores, being published specially for ourselves.

- The Ideal Cook Book will be mailed postpaid to
- any subscriber sending three new yearly subscribers
- to FARMING.

Copy of the Ideal Cook Book to present subscribers on receipt of 50 cents. Published price is \$1.00.

Handsome Dollar Book for One New Subscriber

The book is "LIFE OF CHRIST FOR THE YOUNG," by Geo. L. Weed—a book of 400 pages, with 74 full-page half-tone illustrations. It has received the commendation of representatives of the leading Christian churches and of the religious press. The author, both by training and sentiment, is thoroughly qualified to write such a book, and has personally visited the Holy Land, enabling him to speak from experience of the scenes described. It is bound in handsome cloth, with embossed front cover. Publisher's price, \$1.00.

- This book will be mailed postpaid to any subscriber
- sending one new yearly subscriber.

Present subscribers to FARMING will receive a copy, postpaid, on receipt of the nominal sum of 25 cents.

MAKE A QUICK START



THE evidence is unmistakable that Canada is now to experience a period of remarkable prosperity. Crops are large and prices are good. Manufacturers are working overtime. Merchants report orders and sales far in excess of former years. Your opportunity is to take advantage of this "growing time," and push for subscriptions for FARMING. The reply, "I like FARMING, but cannot afford to take it, money is so tight,"

you'll not hear in your canvass of this year.

Every present subscriber can easily get at least one new subscriber. You can likely do a good deal more.

Address all letters, and make cheques, drafts or money orders payable to

FARMING

CONFEDERATION LIFE BUILDING, TORONTO, CAN.

Quick Cure For Lump Jaw

Not one case in a hundred that cannot be cured by one to three applications of

Fleming's LUMP JAW CURE



Trade Mark Reg'd.

Lump Jaw has heretofore baffled treatment. It has infected herds and pastures, and caused loss of hundreds of thousands of dollars. This new remedy cures quickly, thoroughly, and permanently. Leaves jaw smooth and sound. Easy to apply; costs but a trifle compared with results.

GUARANTEE.—Every package sold under positive guarantee; money back if it should ever fail to cure.

Sent everywhere by mail, **Price, \$2.00.**

FREE A valuable illustrated treatise on cure of Lump Jaw sent free to readers of this paper.

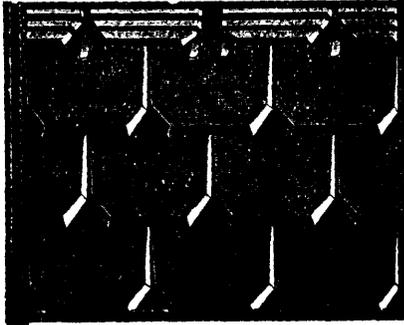
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CONTAGIOUS ABORTION AND HOE CHOLERA

and a most effective DISINFECTANT, simply because it is a strong ANTISEPTIC, and destroys the germs upon which such conditions depend, and does not contain corrosive nor irritating properties.

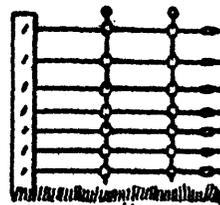
Circulars (specially prepared by a veterinary surgeon) on application.

THE WEST CHEMICAL CO.,
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DEPT. F Agents wanted in all counties.
Headquarters for **LINCOLN SHEEP DIP**

Fence Machine Free,

With 100 Rods. License Free. Wire only 2 1-2c.



Pat. Jan. 1895.

CANADA FENCE CO., London Can.

To introduce Diamond Grip Fence in new localities. Don't have to wind wires around each other (like old woven fences), as cross wires are gripped and protected from weather; can never slip or break; 5 times as strong and lasts 10 times as long, as any woven wire fence made; can use coiled spring, plain, twisted or barb wire. Cheapest Fence in end that was ever invented. Order now wire will go higher. Write quickly to

ESTABLISHED 1877.

A. H. CAMPBELL, President.

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British Canadian

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MAKES LOANS on all classes of Real Estate Securities. **PURCHASES MORTGAGES**, Municipal Debentures, etc. **ISSUES DEBENTURES.** The Company also receives money on deposit, for which debentures are issued for three to five years, with interest coupons attached, payable at its bankers free of expense. Clergymen, trustees, and others having money to invest will find these debentures a handy investment. Apply to the Manager,

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In Ontario. Prices Low. Terms of Payment easy. For lists and particulars apply to

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BEWARE OF IMITATIONS.

FARM LOANS

CREDIT FONCIER F. C.

This Company has a large amount of money to lend on improved farms at low rates.

Correspondence is invited from farmers who wish to buy more land, to improve their properties, or to save money by reducing interest.

W. E. LONG, Manager,
28 Wellington St. East.
TORONTO.

FARMING

VOL. XVII.

SEPTEMBER 5th, 1899.

No. 1

Better Than Ever

Seventeenth Year of Publication: Third Year as a Weekly

Beginning with this issue *FARMING* enters upon its seventeenth year of publication and its third year as a weekly. The change to a weekly was made two years ago, and we have reason to feel proud of the progress made since then in all its departments. The style and character of the paper has been greatly improved, and the space devoted to reading matter has been enlarged. A Farm Home department has been added, and the weekly market review has become recognized as a most reliable source of information in regard to the markets for all kinds of farm products and live stock.

As to the future: while marked progress has been characteristic of past years we are within the mark when we state that the year upon which we have just entered will show still greater improvement in every department of the paper. We are in a position to do better work than ever before for the farmer and his interests. Without going into particulars we might state that arrangements are now under way for a number of special contributions during the year from practical farmers. The Farm Home department will be greatly improved and brought more in touch with the farmer's household and more particularly the younger members of it. The *Agricultural Gazette* will be enlarged and will be made of still greater value to the important interests which it represents. Special attention will be given as heretofore to the preparation of a reliable and up-to-date market review each week, and this in itself is worth the subscription price of the paper to any farmer.

Special attention is directed to the splendid premium offers given in this issue. Will not every reader make a note of them and endeavor to swell our subscription list? This exhibition number is a magnificent one for opening up the fall season with. If you have any friends or neighbors who are not already subscribers for *FARMING*, kindly send us their names and addresses, and we will be pleased to send them a copy of this issue free.

Visitors to the Toronto Fair should bear in mind that they will be made welcome at the *FARMING* tent. Pens, ink and paper will be at the disposal of stockmen and others who may care to use them. A representative of *FARMING* will be in the tent during the fair to renew and receive subscriptions. Our tent is in the northern portion of the grounds directly opposite the Farmers' Institute tent.

Our Illustrations

We take very great pleasure in drawing special attention to the illustrations in this issue. We think everyone who examines them will agree with us that they are as fine a group of illustrations as has ever been gotten together in a similar publication in Canada. One of their special features is the presentation of some of the leading markets in Canada and the old land. These have been procured at considerable trouble and expense, but we think they demonstrate one point, that there are in the cities and towns of Canada as good facilities for the marketing of

farm produce as are to be found anywhere. There are two or three more views that we would have liked to have had to make the list complete, but we found it impossible to get the photos in time. We have to thank those in the various cities represented who so generously aided us in procuring this series.

The other illustrations will be found equally as interesting. Those illustrating the article on "Birds and Weeds" were specially prepared by the writer of it. The English and Danish creameries, the prize winners at the Royal show and the remainder which we have not the space to specify are both entertaining and instructive. Last but not least is the illustration on the outside of front cover. A well-known artist of this city spent several weeks in its preparation. The scene which he depicts of Miss Canada drawing back the folds of the Union Jack and exposing to view one of Canada's many fertile farms, is, we think, worthy of the artist's skill and the great agricultural interests which this journal represents. It indeed makes a fitting introduction to the splendid storehouse of valuable information to be found within. The striking cartoon on the outside of the back cover suggests a line of action that would be in the interests of Canadians to follow. There is much to be gained and nothing to lose in patronizing home manufactures.

Pan-American Exposition

The close of the nineteenth and the beginning of the twentieth century will be commemorated by all the republics and colonies of the American hemisphere, by holding an international exposition at the city of Buffalo from the 1st of May to the 1st of November, 1901. At such an exposition Canada should play a most important part. This exposition in several respects will be of greater value to this country than the great World's Fair held in Chicago in 1893. At an early date the Governments, both Dominion and Provincial, should make arrangements for a creditable exhibit of Canadian Agricultural products. We as a nation should do our best or nothing.

That the exposition will be carried on on a scale in keeping with the importance of the countries to be represented is seen from the fact that the aggregate resources at the disposal of the management at the commencement of the enterprise amounted to \$5,800,000. Sufficient assurances have also been received to justify an expectation of a complete success and a representation from the several American nations and the colonies of the West Indies even greater than was made at the World's Fair in 1893.

We reproduce in this issue a couple of views of the site on which the exposition will be held, and later on, when we have more space, will give a more detailed description of the exposition itself and some further reasons why Canada should play a most prominent part in connection with it. In the meantime our breeders and those connected with the various live stock and agricultural associations should interest themselves in the matter with a view to making a most creditable display of Canadian products.

The Toronto Fair, which opened on August 29th, is without doubt the largest and best exhibition of its kind on the continent. Do not fail to see it.



The St. Lawrence Market, Toronto.

Canadian Products in the Markets of Great Britain

By Prof. Robertson, Commissioner of Agriculture and Dairying

The following table, prepared from the British Trade Returns, shows the quantities of some farm products imported into Great Britain from all countries in 1894 and 1898, respectively, and also the quantities of the same products imported from Canada in those years :

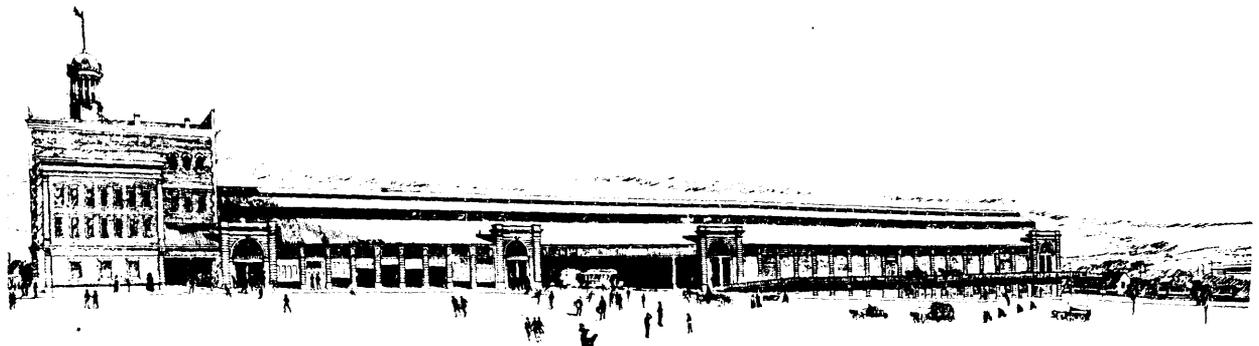
IMPORTS INTO GREAT BRITAIN.
(From British Trade Returns.)

	1894.		1898.			
	From all Countries.	From Canada.	From Canada.	From all Countries.		
Oxen and Bulls	head	471,794	8,450	195,791	564,390	head
Sheep and Lamb	"	484,597	135,622	42,070	663,747	"
Horses	"	22,866	5,424	6,359	42,911	"
Bacon	lbs.	413,235,648	23,497,616	60,018,448	639,667,064	lbs.
Hams	"	126,535,808	5,664,512	13,151,936	220,897,488	"
Butter	"	288,381,520	2,339,344	17,568,880	59,251,336	"
Cheese	"	253,808,240	127,915,648	169,404,272	262,918,624	"
Grain, Flour and Oatmeal	tons	19,071,601	317,169	1,073,788	10,730,306	tons
Eggs	doz.	118,769,680	2,546,040	7,453,500	144,246,010	doz.
Apples	bush.	4,968,669	1,081,859	1,442,936	3,457,716	bush.
Pears	"	1,310,074		29,494	491,669	"
Preserved Fruit	lbs.	42,874,894	433,881	3,421,612	75,850,332	lbs.

I understand that the British Trade Returns give credit to every country for all products shipped from its ports to Great Britain, whether they originate in that country or not. Canada does not get credit in these tables for the large quantities of bacon which are shipped from it through United States ports. That route, I learn, is chosen to ensure delivery in London on a particular day every week. Regularity of delivery is of importance in securing and holding a steady trade. No credit is given to Canada in these returns for the considerable quantities of cheese and grains which have been carried through Portland, Boston and New York during the winter months. On the other hand, Canada gets credit in the British Trade Returns for what of United States produce leaves her seaports for the United Kingdom.

FIFTY-FIVE MORE STEAMERS.

The total quantity of the produce from Canada under these twelve headings may be counted at 486,854 tons in 1894 ; and it had increased to 1,312,811 tons in 1898. If every large ocean-going steamer carried 3,000 tons of these, in addition to lumber and other freight, the exports to the United Kingdom in 1894 would represent 162 steamer loads. With each steamer making an average of five trips per season, thirty-two steamers would be required. On the same basis, the quantities in 1898 would provide 437 steamer loads, requiring eighty-seven steamers to make five



Proposed Improvement to St. Lawrence Market, Toronto, showing the building extended over Front Street to the Bay.

trips each in the season. When I said at the launching of the Government steamer *Minto*, in Dundee, that the growing trade of Canada would require ten additional steamers a year to carry products across the Atlantic, my estimate was well within the actual rate of increase of the past four years; and there is no evident reason why the increase should not be greater during the next four years.

I subjoin a few notes from observations which I made when in Great Britain this summer. As I devoted most of my time to other matters, I did not examine the problems and conditions of the markets as fully and carefully as I had done on some previous occasions.

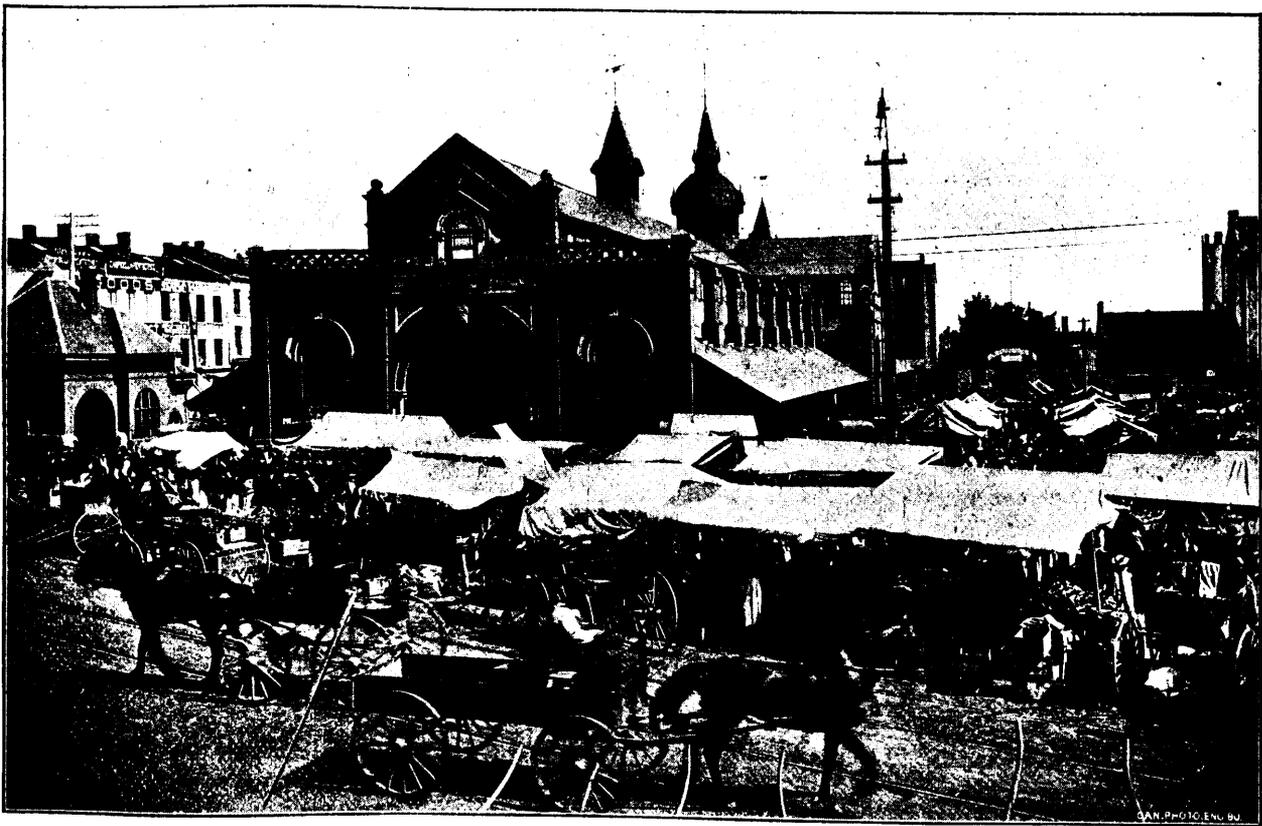
CATTLE.

I crossed from Montreal to Liverpool on a steamship which carried over 600 head of cattle. The weather was fine, the ship was steady and the cattle appeared to gain rather than to lose in weight. There were a number of fine finished cattle from the neighborhood of Brantford, Ont., but a large number of the steers on the steamer were

By a light application of Basic Slag (Thomas-Phosphate) a three-acre plot had been improved to carry twice as many sheep and yield nearly twice as much mutton per acre as the adjoining plot of three acres untreated. That was not due to an increased yield of produce on the field, but to an improvement in the quality of the herbage. When a part of each of the plots was cut for hay, there was little difference in the yield per acre. The application of phosphates had produced a plentiful growth of white clover on the treated plot; whereas clovers were hardly visible on the other one. There had not been any sowing of clover or grass seeds on the field. It was an old permanent pasture. I saw similar results in a large field carrying cattle on the same farm. Are there not thousands of acres of pasture in Canada susceptible of similar improvement for sheep; and further improvement by the pasturing of sheep for other uses afterwards?

HORSES.

The horses one sees everywhere in Great Britain impress



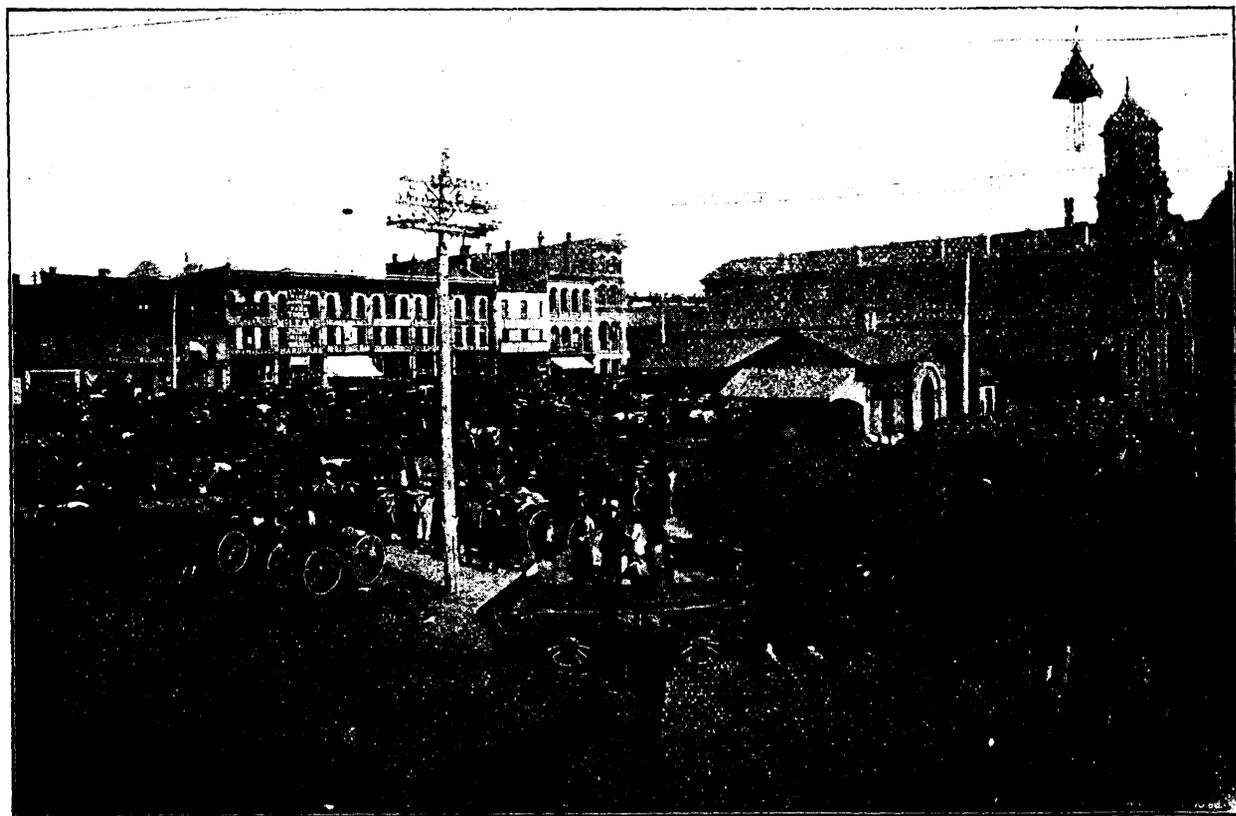
Hamilton City Market at 6 a.m. on an ordinary market day.

not nearly fat enough, and many of them were of a rather poor sort. As far as I can learn, very large cattle are not what are wanted; but cattle of good, compact shape and *thoroughly fattened to a finish* are the favorites with buyers, and fetch the highest prices.

SHEEP.

I did not have a chance of seeing anything of Canadian sheep or mutton in the British markets. In a visit to the Experimental Farm, carried on under Dr. Somerville, of the Durham College of Science, Newcastle-on-Tyne, I saw a most interesting experiment in progress in the fattening of sheep. Sheep have been so generally known as improvers of pasture fields, that they go under the name of the golden hoofed feeders. At the Experimental Farm, out from Morpeth, England, there had been improvement of pasture *for* sheep, and doubtless a further improvement of the land *by* the sheep for any use to which it might be put afterwards.

one as being animals of substance and good action, suited for the various uses to which they are put. Those on the heavy railway lorries step along with a load of four or five tons behind a team; those on the smart carriages divide the honours for showiness with the liveried importances on the boxes. The matter-of-fact bus horses, cab horses and van horses have an air of good breeding about them. Apparently they look, work, and live up to it. Of what other use is good breeding? They are well-balanced horses. One seldom sees a horse whose head is a half too large for the size of his feet, or a horse with a neck short out of all proportion to the length of his back. The English ideal is a longish neck with a short hack. Great speed is not sought for. Plenty of substance, well proportioned form, and somewhat showy action are wanted in all sorts of horses. Crosses between extremes in the stallion and the mare give progeny ill-shapen or ill-nerved in some respect. Better judgment is more needed than better foundation stock in Canada.



The Farmers' Market, London, Ont.

BACON AND HAMS

Canadian bacon and hams are now advertised on large placards at railway stations, on busses and in shop windows. They are getting a good hold on the British markets. They are making headway. Any tendency towards fatness or softness is an occasion for fault-finding with buyers, from the housekeeper who wants enough for a breakfast, to the wholesale dealer who takes five or ten boxes in a lot. Every year I observe that British buyers become more exacting in requiring that all goods, in any one lot under one brand, shall be without exception precisely what they are represented to be. One large buyer of bacon said to a Canadian packer: "You may think me too particular, but when I buy five or ten boxes of your No. 1 bacon, I want every side of it to be of No. 1 quality. If there is one side of No. 2, or one side soft, I don't want it, and there is sure to be trouble."

BUTTER.

The butter trade is growing. I compared some Canadian creamery in the same warehouse with Danish butter. The finest Danish was still superior to the Canadian; but the Canadian was better than the second quality of the Danish. In Denmark it is the general practice to pasteurize the cream before it is ripened for churning. In Canada few buttermakers do that in the summer months.

I found one large importer complaining that Canadian butter was too dry to suit his customers. He said a butter more moist in body, with a mild flavor, would sell better and to the best class of customers. The demand for a heavy-bodied butter, which used to be constant in the old days when there was no cold storage, is now limited to only a few districts. The butter from France, which fetches the highest price of any butter imported into Great Britain, is soft in body, almost salve, and mild and quick in flavor. The exports of butter from the port of Montreal from 1st May to week ending August 19th, this year (1899), have been 191,849 packages, against 69,306 packages for the same time in 1898, and 3,223 packages for the similar period in 1894.

CHEESE.

Canadian cheeses are suiting the trade better this season

than last. A Dundee merchant said to me he did not think we needed to improve them any further. In passing let me mention a characteristic which I noticed in merchants in Scotland with whom I discussed our products. They praised the good points which they found in them. The English merchants take particular pains to point out all the defects and to find fault. I suppose the English are afraid to praise things lest Canadians should want more money for them. The aim in our cheese trade now should be to keep up evenness of rich quality and get a milder, cool flavor by curing them at a temperature of between 60 and 65 degrees Fahr.

FLOUR AND OATMEAL.

Canadian flours and oatmeals are taking the lead wherever they are known. As yet few bakers know that Canadian flour is superior for bread-making to any flour imported into Great Britain. Independent and reliable tests show that Canadian flour contains about ten per cent. more gluten than other flours; and its bread making qualities are also in that proportion, both as to the quality and quantity of the bread.

Canadian oatmeals are making a good place for themselves, particularly in England. The Scotch people are partial to the porridge and oat cakes from the home-grown "corn." As a matter of fact, the consumption of oatmeal in Scotland seems somewhat on the decrease, while it is greatly on the increase in the cities of England. A beginning has been made in sending Canadian oatmeal in 2-lb. packages. It is superior in flavor, in substance, in freedom from seeds, and in appearance to any of the oatmeals in packages going from the United States. Theirs are advertised most conspicuously, I am told to the extent of several hundred thousand dollars a year. By its superior quality, Canadian oatmeal should take the best of that trade in the course of a few years. The climate is on our side, and climate counts for very much in the quality of a food which a country is able to produce.

EGGS.

The Canadian egg-case, which was objected to a few years ago, is now the favorite egg-case on the market. The

egg trade has had the benefit of the experience of able men in Canada who have been in it for many years. The individual producer seldom realizes how greatly he is indebted to the skill, tenacity and ability of the experienced shippers of his products. Canadian eggs now come next to the best French eggs in value per dozen. They are ahead of all other foreign eggs in the British markets.

POULTRY.

I found fattened chickens in good demand in Great Britain. Chickens and turkeys should be sent from Canada with their crops and intestines thoroughly empty. They should be starved for not less than thirty six hours before being killed. They should not be drawn, and the heads should be left on. Those shipped in accordance with the bulletin which I issued from the Department of Agriculture last year, seem to have pleased the customers very well and paid the shippers.

FRUIT.

Our Canadian apple trade would bring into Canada, I think, twice as much money for the same number of barrels if the fruit was all carefully sorted as to size and quality, before it was packed. Small and blemished apples are seldom worth shipping at all; but the best value that can be realized out of them can be obtained if they are packed by themselves. A fine price and a growing trade can be got for uniformly sound, large apples, equally good throughout the whole barrel or box.

I think a package smaller than the barrel will begin to find favor in Great Britain. As yet the wholesale dealers say they have a preference for the barrel; but retail dealers and housekeepers interested in Canadian products, say they would prefer to have a smaller package—for instance, a box holding about a bushel.

There is more money for shippers of all classes of products in sending them properly and closely graded, than in sending some good, some inferior; some large, some small; some light, some heavy; under the same brand or in the same package.

PRESERVED FRUIT.

Fault was found with Canadian canned fruit, because in many instances different varieties of apples were mixed in the same tin. Sometimes an apple or other fruit in one can would be firm, while another would be soft. Sometimes also there would be fruit of different tints of color in the same can. These are all serious defects. Uniformity of quality in the one package and in the one lot is the call of the market everywhere; and for that class of goods only will the highest current market prices be obtained.

Birds vs. Weeds

By C. W. Nash, Toronto, Ont.

The farmers of Ontario as a class are as keenly alive to their own interests as any other body of business men. They generally give good value when they sell, and they expect and will have value for money they pay. But there seems to be a streak in human nature which prevents men from either seeing or properly appreciating services rendered to them which cost them nothing.

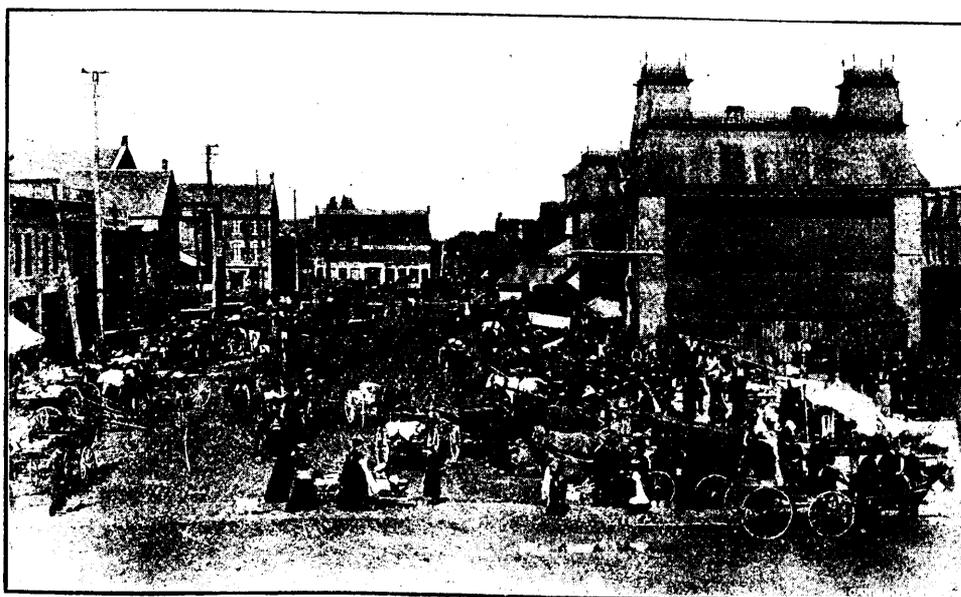
Year after year the farmers, fruit growers and gardeners suffer great loss from the depredations of insects, and pay out considerable sums for labor applied for the destruction of noxious weeds, and would, no doubt, be quite willing to pay much more to fully protect their crops from injury by these pests, if it could be done. Perfect immunity from insects and weeds can never be expected. We may, however, reduce the loss caused by them much below what it is at present, without the expenditure of any great amount of time or money, by availing ourselves of the assistance of the natural enemies of both of them.

The most valuable assistants we have in our struggle against the weeds and insects destructive to crops are the birds. Unfortunately of late years these have decreased very rapidly, owing principally to the persecution they have suffered in the settled districts during the nesting season. This has had the effect of driving them away from the cultivated fields and orchards, where they are most needed, for the seclusion of the wild lands where they can raise their young in comparative security. It is while raising their young that the birds would be of the greatest service in and about the cultivated lands, the quantity of insect food required by each young bird while growing being enormous.

It used to be the custom to divide birds into three classes with reference to the food they were supposed to eat, viz.: birds of prey, insect eaters, and seed eaters. No such distinctions can properly be made; all birds, even the hawks and owls, feed more or less upon insects, and nearly all the so-called seed-eating birds raise their young entirely upon insects. After the young have reached maturity, and the approach of cold weather reduces the insect supply, birds of this class display their usefulness by helping to clear the fields of the seeds of weeds as they ripen, and all through the winter they continue the work of harvesting this most objectionable crop.

NATIVE SPARROWS.

Among the most familiar birds that spend the summer in and about the farm are the native sparrows, commonly



Bytown Farmers' Market, Ottawa, Ont.

known as grey birds. The most abundant of these are the Chipping Sparrow, Song Sparrow, Vesper Sparrow, and Field Sparrow. The first three are to be found everywhere; the fourth is more locally distributed, but is sufficiently abundant to be of economic value where it occurs. They are all of the so-called seed-eating class, but the seeds eaten by them are the seeds of plants that can be dispensed with.



White Throated Sparrow.

I have but rarely found any cultivated grain amongst their stomach contents, the only ones being a few oats in the fall. All through the summer the principal part of the food of the adults consists of insects, and the young are fed entirely upon them until they leave the nest. As these birds raise two and sometimes three broods each season, this means a vast number of insects taken from the crops. Small insects of all kinds are eaten, but the birds seem to show a preference for beetles, particularly for the pea weevil or pea bug. These appear about the peas when they are in blossom, and I have often watched the Chipping Sparrow, Vesper Sparrow, and Song Sparrow, together with the much-abused House Sparrow, busily engaged in capturing these beetles about the pea vines, and specimens taken by me at this time had their crops and stomachs filled with them.

When the breeding season is over, these sparrows gather into flocks, and may be found in large numbers in the weedy patches too often left about the farm. Here they are doing service not less valuable than that rendered by their destruction of insect pests in the summer, and which has only to be observed to be appreciated.

I have found that in confinement birds of this class will each consume about a quarter of an ounce of small seed every day. Multiplying this quantity by the number of sparrows to be seen on any farm, and an idea will be obtained of the quantity of weeds disposed of by them during the season.

In the spring we are visited by an innumerable army of sparrows larger than those I have mentioned. These are the White-throated Sparrow, White-crowned Sparrow, and the Fox Sparrow. They are on their way to their breeding grounds north of us. The Fox sparrows pass through early in April and rarely stay more than three or four days. The other two come later and remain much longer, their migration lasting about three weeks. During all this time they frequent weedy places, where they may be observed industriously foraging for the seed of injurious plants. About the middle of September they return, having their numbers

largely increased by the young raised during the summer, and they remain for about a month. During that time they visit nearly every weed patch and brush heap in the province and feed luxuriantly, not only on the seeds of the weeds we are most anxious to get rid of, but they also find in such places large numbers of mature insects which would lie there dormant through the winter ready to emerge in the spring to work mischief in the crops. Each female insect killed at this time means cutting off the source of supply of several hundreds of larvæ for the next year. In this way the birds are doing most excellent work for the farmer, the value of which can hardly be calculated in dollars and cents, and it is work that, with all our industry and ingenuity, we are not yet able to do for ourselves.

WILD CANARY.

Another useful weed-destroyer is the common American Goldfinch, or Wild Canary, as it is generally called. The majority of these little birds remain with us in Southern Ontario all through the year. In winter they gather into flocks and resort to the evergreen woods, where they are not often noticed. At this season their food consists of seeds of the hemlock and of such plants as stick up through the snow. On mild winter days flocks of them may sometimes be seen visiting the weed patches about the clearings. In the summer they scatter all over the country, frequently nesting in small trees about the farms and orchards. They are not insect-destroyers to any appreciable extent, their favorite food being the seeds of some of our most noxious plant enemies, such as the dandelion, Canada thistle, and others bearing plumed seed. The first appearance of these birds in the cultivated parts of the country is generally coincident with the seeding of the dandelion. As soon as the seed is formed numbers of these birds, assisted by some of the sparrows I have before mentioned, and the purple and indigo finches, may be seen flitting from head to head, eagerly feeding upon it, and so preventing a greater spread than we have of this troublesome plant. By the end of July and on through August the Canada and other thistles are forming and ripening their seeds. The little gold-



Song Sparrow.

finches fairly revel in these. Their sharp beaks are adapted for probing the involucre of the plant and extracting the seed, from which they cut off the plume and devour it. This class of weeds is one of the worst pests we have to contend with and very difficult to get out of the land where it has established itself. As it is, we are over-burdened

with it, and without its natural enemies to assist us in keeping it down, we should find the contest much more difficult to carry on.

Besides the species I have referred to there are many others assisting us as weed destroyers all through the summer, amongst them the Quail which is unfortunately confined to the southern and western parts of the province. This good bird, besides furnishing sport and delicious food, is an insect eater and notable weed destroyer, and only needs some slight protection through the coldest part of the winter to become abundant in its chosen localities. With very little trouble this can be furnished, and the farmers who give it will be well rewarded for their work.

As winter comes on and our summer residents leave for the south, vast flocks of weed gleaners come from the north to take their place. The most familiar of these are the Snow Bird, the Tree Sparrow and the Slate-colored Junco. Large numbers of these birds remain with us all through the cold season, frequenting patches of weeds that carry their seed above the snow, and by their work materially lessen the number to germinate in the spring.

The work of destroying weeds is continually before us, wherever the land is cultivated, and any assistance that we can obtain in the war we are compelled to wage against these plant enemies is well worth our attention. The birds are the cheapest and best allies we can have, those I have mentioned being invaluable. The trouble is we have not enough of them in and about the cultivated fields where they are most wanted. Save them from persecution and protect them at all times, and they will be induced to remain about the farms and breed there. We have a sufficient law for this purpose, and every farmer should see that it is enforced on his own premises. By doing so, he will not only derive pleasure from the presence of our feathered friends, but also substantial benefit.

Raising and Training Horses for Market

By W. C. Edwards, M.P., Rockland, Ont.

Complying with your request I will give you in short terms my views on horse raising and training for the market. There, perhaps, never was a more opportune time for the farmer of Canada to engage in horse raising than the present. For a few years horses have been more or less a drug on the market arising from the falling off in the demand through the great commercial depression in the United States and also the inception of electricity as applied to street cars and to some extent to other purposes. This gave a sudden shock to the value of horses. True, the chief class of horses affected was the ordinary or common place horse, such as was used on street railways, but their low prices affected also somewhat seriously the value of the heavy draught horse as well also that of the carriage and saddle horse.

Many believe that in a great measure the usefulness of the horse is gone, and that in almost every sphere he will be replaced by electricity. I hold an entirely different view, which is, that for the greater number of purposes for which the horse has been used he will continue to be used, and that in the end the developing forces of electricity will cause a greater use for horses, just as the numerous and succeeding inventions of the world, commonly called labor saving devices, such as the cotton gin and many, many others, have not lessened the demand for labor, but by their aid in developing the resources and the wealth of the world have enormously increased the demand for labor, and at same time while making it possible that the daily hours of the toiler might be reduced have also enhanced very largely its daily remuneration. Just as the ingenuity of man makes it possible for the workers on the world's surface to increase production, so the wealth of the world will increase and the demand for labor increase. And the same applies to the use of and demand for horses. As I hold firmly to the conviction that so good a developer and enricher of the world will electricity be that in ten or

twenty years hence the use for horses will be far greater than if electricity had not been introduced. Many run away with the idea that the idle men of the world are benefactors to those who labor, that they leave all the work for them to do, but unhappily, the reverse is the case. There is no greater menace to the laboring man than that there are men who do not labor, for the men who do work not only have to make their own living but also the living of those who do not work. There is no greater curse to the commerce of the world than the great standing armies of Europe, and also the many idlers who will not work. If they were also producers how much greater would the commerce and interchange of products be and how vastly richer would the world be. And but for invention which has enabled the producers to produce so much more than they otherwise would, how much poorer this world would be today!

GREATER DEMAND FOR HORSES.

Holding strongly, as I do, these views and regarding electricity as one of the great developers and enrichers of the future, I contend, as before stated, that in the near future there will be a greater demand for horses than if electricity had not been introduced. But the great demand will be for a superior class of horses; the ordinary horse, such as was used on street cars, will no longer be wanted, and there will be no place whatever for the scrub. The great demand of the future, in my opinion, will be for the good-sized, well-developed draft horse and the high-class coach and saddle horse. For the right stamp of these horses I believe the demand will grow just as the wealth of the world develops. But to produce such horses the haphazard and careless breeding, which, unhappily, has prevailed in Canada to too great an extent with a large number of our farmers, must cease. Greater care and more expert and advanced methods must be applied. And all the education that can be given in this particular should be given. There are many of our advanced farmers and horse-raisers in the country far more competent to write upon the subject than I am, and they should put their brains and pens to work and write vigorously. For myself, I have not the time and have not the knowledge or experience of many, but what little I can do I do with all my heart, for nothing has a greater place within me than a desire for the promotion and advancement of Canadian agriculture.

BREEDING HEAVY HORSES.

The question is "Raising and Training Horses for the Market." The greater demand will be for the good, large, serviceable draft horse; and it comes more within the scope of the greater number of our farmers to raise this style of horse, and only the more expert horsemen should engage in the production of carriage and saddle horses. I do not think much need be said as to raising and training this class of horse for the market, except this: for dams use the best brood mares possessed or obtainable by each farmer; breed only to purebred sires of the recognized draft breeds of horses; work the mares moderately and carefully while carrying the colt, and if no work is to be done do not keep the mares tied up continuously in stalls, but allow them freedom and plenty of daily exercise; neither underfeed nor overfeed the mare; give her what clover-hay or hay, with a portion of straw, that she needs, also a small allowance of either or both ensilage and roots and a little grain if idle, and if working a larger allowance, but do not overfeed with grain. A very large percentage of mares so treated will produce strong and vigorous colts. The treatment afterwards must depend much on the conditions.

RAISING THE COLT.

The mare and colt should, if possible, be kept in a good roomy box-stall for about a week and then let out in day time and kept in at nights for a short time. Good pasture, however, is the great requisite, but where circumstances will permit to keep the mare and colt in during the hot days of the fly time it is a great benefit, and a small amount of grain expended on the colt, and sometimes to some extent upon the dam, is profitable in pushing the colt forward to early and good development. In many instances, however, farmers are compelled to work their mares

while suckling the colt. In such case the mare should receive fairly generous feeding and good treatment as well as the colt, and great care should be taken not to allow the colt to suckle except when the mare is cool and in a normal condition. For the first two years particularly the colt should get careful attention, and if fed some grain it will help it materially, but the great and primary requisites are good pasturage in summer, sufficient feed, including during the winter, if possible, a portion of each or both ensilage and roots, good comfortable quarters and abundance of daily exercise. The daily full run of a good large yard or paddock is beneficial. At two, coming three, the colt may be handled and made do light work. The following spring he may do light harrowing or similar work on the farm, and his duties may be increased from that forward till he is five years old, when if properly handled throughout he should be turned off profitably to the farmer and a credit to the man who produced him.

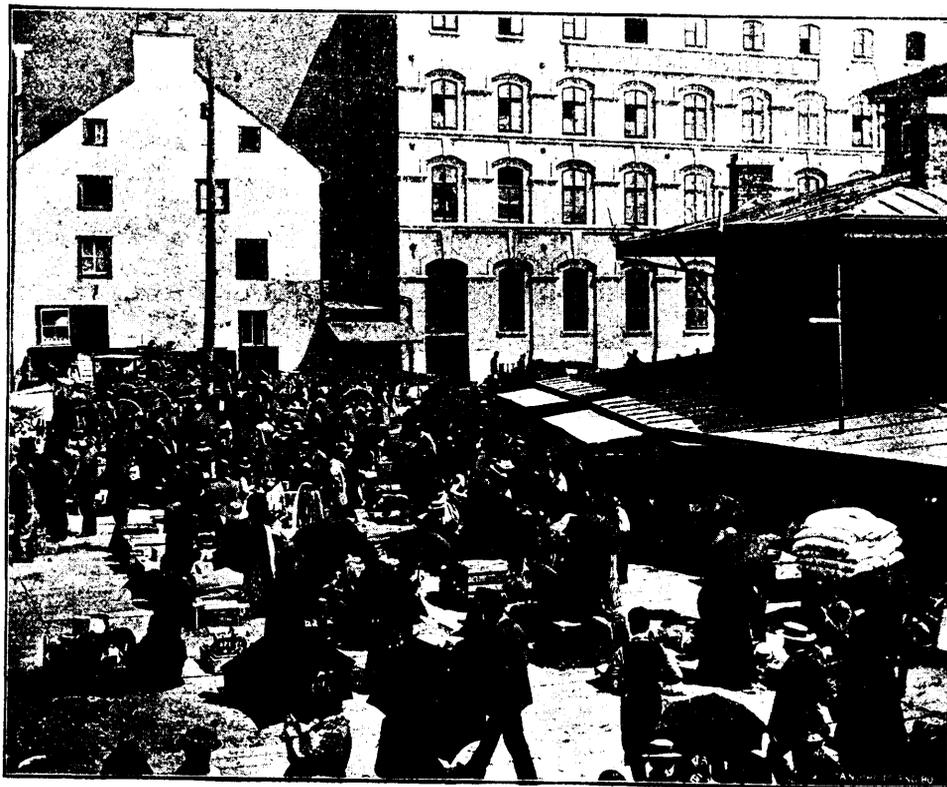
CARRIAGE AND SADDLE HORSES.

And now for the carriage and saddle horse. A much more difficult proposition, yet quite within the reach of

to produce and develop the growth of first-class horses for the saddle and carriage, but totally unqualified to fit and educate them for the market. In the saddle and carriage horse, apart from courage, action and performance, gentleness, good style and good general manners are the great requisites, so that the qualified educators of such horses are not very numerous, and when the farmer or some one of his sons is not qualified the better plan is to sell to the dealer who is an educator. Good form and good manners count for much in the value of a sound and otherwise desirable horse, and where the farmer is qualified and where it can be done without the neglect of his general farm work he should profit by his qualifications and obtain the highest market price for his horses.

THE MARKET OUTLOOK.

Now allow me to say this in conclusion. Because of the few horses produced in the United States and in Canada in the past years the supply of horses has run down to very small proportions. Good horses of all classes are exceedingly scarce. And in so far as values are concerned we are on a rapidly rising tide. If our farmers will judiciously



Quebec City Market, showing buyers and sellers.

many of our farmers who are lovers and fanciers of good horses. The first requisites after the capability of the breeder are good dams and good sires, and the dams being so far the greater number therein lies the greater difficulty. In my judgment it is quite a process of evolution which brings about the right class of mares with which to breed the saddle and carriage horse. And it is and has been my opinion for years that in the inception, at least, the large and free use of the thoroughbred sire is the only sound system, and once having fixed the type of your mares continue the use of the thoroughbred sire for the production of saddle horses and hunters, and for the production of park or carriage horses use the Hackney sire or some one of the other carriage sires according to judgment or fancy. As to the general treatment of the mare the matter of feeding and exercise applies as in the breeding of the heavy horse, but as the producer is catering to a far more critical class for the marketing of his horses, just in the same way greater skill has to be put into the breeding, growing and educating of his finished article. The production of the animal is one thing and his education is entirely another thing. There may be many of our farmers well qualified

turn their attention to horse-raising, breed the best kinds of mares they have or can obtain to the kinds of sires I have described, and do not begrudge a good fee for a really good sire, eschew forever the scrub, devote themselves to quality rather than numbers, raise their colts properly and turn them off at a marketable age, no department of farming or stock-raising will be found more profitable, and it will be profitable in degree as proper methods, skill and good judgment are applied in their production. And I think it safe to predict that if those lines are followed it will be many years before another glut occurs in the horse market. Values, however, can be knocked down again by breeding all and every kind of mare to all and every class of sire, scrubs included. The future of this great part of the farmers' industry is in their own hands. Let us hope that good judgment will prevail and that profitable prices will be maintained for many years to come.

I said in the beginning I would be short. I fear I have been too long. I can only hope that my brother farmers in Canada, who may read this article, may not be too severe in their criticism of my first and hurried attempt to write something on the subject of horse-raising.

Fitting Cattle for Export

By John Campbell, Fairview Farm, Woodville, Ontario

As the British markets furnish us with the only available outlet for the surplus of our finished cattle, a careful study of the requirements of those markets is necessary in order to understand what class and quality of animals will command the highest price. Usually the top prices yield the largest profits. Probably there is no other article of food which the Englishman is so particular about as his roast beef. He must have that of the best, if within reach, and is willing to pay a handsome price for the better quality, while the commoner and unfinished carcasses have to compete with many other cheaper and more attractive foods.

NO UNFINISHED CATTLE WANTED.

The time has been when it was profitable to send unfinished cattle across the sea to spend a few weeks or months on the fields or in the stalls, afterwards to be placed on the markets as British beef. But the embargo has ended that line of trade, and now those markets are open to cattle from Canada only to land and be slaughtered at the port of entry within a few days of arrival. These facts all clearly indicate that it is only well bred cattle, full of quality, and finished in such a manner as to furnish beef of the kind which pleases our discriminating customers, that will give the satisfactory returns which should and can be got out of a trade to which there is scarcely a limit if we supply a first-class article.

We are fast getting a firm hold of the bacon trade by growing the right kind of hogs and finishing them with proper feed, so that packers can produce the class of bacon which is in demand. From their splendid success we can learn much and get helpful encouragement to work along similar lines in producing and fitting cattle for those leading markets of the world. We must begin by having the right sort of bullocks or heifers to fatten in field or stall or pen. It is the special bred cattle that stand a good chance of giving profitable returns for labor and cost.

MUST HAVE CATTLE OF RIGHT TYPE.

With the manifold ways of assistance given by our Federal and Provincial Governments to the dairying interests, and comparatively little to the interests of beef producers, feeders in many localities are suffering from a great difficulty in securing suitable cattle to fit up for the export trade. It is only the progeny of good bulls of the beefing breeds and cows in which there is the tendency to flesh up when not giving milk, that stands the test of fitting for foreign markets successfully. Having secured good cattle, one of the most important parts of the business is well in hand. The next consideration is how shall the feeding be done so as to get the best results? Here and there are feeders experimenting with dehorned cattle fed loose in pens. So far we have no account of cattle so fed, failing to give better returns compared with those fattened in stalls. The liberty to move about apparently promotes a better assimilation of the feed consumed, and the cost of labor in

caring for them is materially reduced. Besides the bullocks are kept strong and sound on foot, the same being satisfactory to the shipper, and tending strangely towards the increasing of his cash balance at the end.

In stall or pen fattening a large percentage of the daily feed must be of a succulent nature. Roots formerly, and ensilage more recently, supply that necessity. Many successful feeders use both roots and ensilage in preparing the rations. Others still adhere to the old time method of using roots only, with the dry foods, and many of them certainly have not failed in producing highly finished exporters, while occasionally we learn of successful feeders who have discarded roots entirely and pin their faith very strangely to ensilage as the mainstay in their winter fitting operations.

THEY MUST BE PROPERLY FED.

The careful examination of the many different reports from the feeders using these different kinds or a combination leads to the conclusion that so far as the proper fitting



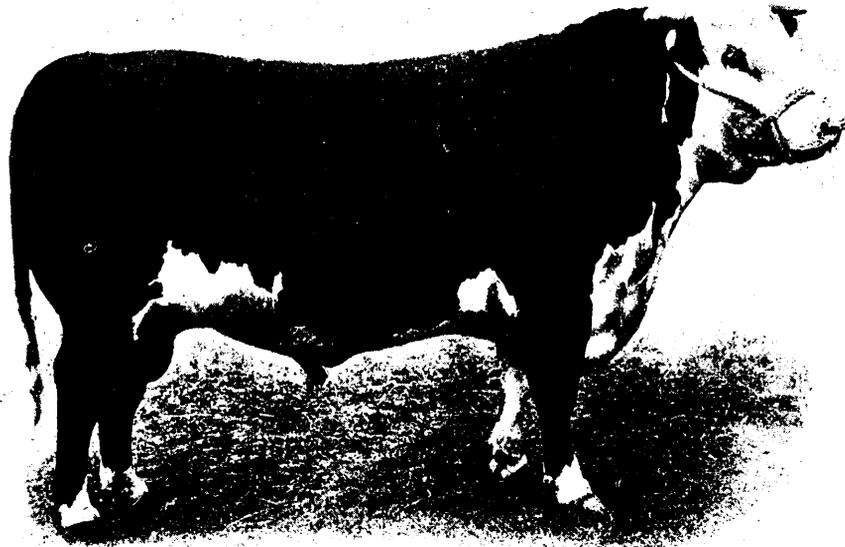
Shorthorn Heifer Cicely, property of and bred by Her Majesty the Queen; winner of Shorthorn Female Championship at the Royal and Highland Shows, 1899.

of cattle for the export trade is concerned it can be well done with either one or both combined. When the question of cost relative to results is to be decided there is more difficulty met with, as it has not been satisfactorily demonstrated by experimenters that the one method has any decided advantage over the other in that respect. Without doubt, fully as much of the success in profitable production of the well-finished export bullock is to be attributed to other sources as to the kind of succulent feed used. The comfortable housing, the kindly treatment, the quantity and quality of roughage, the kind of grain or grain mixtures, and the regular watering, with plenty of exercise and cleanliness combine in turning out cattle in that bloom which proves so attractive to the buyer that it induces him to pay the highest price to secure them. They in turn give him much satisfaction in handling, and when the consumer is reached he finds the beef so much to his taste that he sounds out the praises of the Canadian bullock and advertises our country as a place where we have got the men, the climate, the feed, and the cattle which can furnish John Bull roast beef second to none and an article that suits his dainty palate to a nicety.

Judging Beef Breeds

By Col. D. McCrae, Guelph, Ont.

The leading breed of beef cattle in Canada is the Shorthorn. It is the great beef breed of the country and the other breeds do not make up—all together—anything like the numbers of this breed. Good judges of Shorthorns are not difficult to get. There are many good judges who



The Queen's Hereford Bull, Dictator, 1st Prize at the Royal Show, 1899.

have made a life study of the breed and its peculiarities. For the other breeds, Galloways, Herefords and Polled Angus, it is more difficult to get good men who have a knowledge of the little things which in the eye of the expert go to make an animal very near perfection. As a consequence Fair managers too often take men who may be good judges of Shorthorns but who know little or nothing of the peculiarities of the other breeds. Only those having ample and accurate knowledge of the breed being judged should take a position as judge.

It may be said that beef production being the ultimate destiny of the beef breeds the one giving the best carcass from a butcher's standpoint should be the animal to get first place. Only to a limited extent is this true. It is well known that butchers do not make good judges in breeding since we want in beef breeds, beef, good beef and plenty of it, spread liberally on the most valuable parts. A carcass may have size and weight and be less valuable than a much smaller one having the valuable parts better fleshed. In a carcass of beef some parts, notably sirloin, rib roasts and steak portions, will bring six times the amount per pound obtained for the least valuable parts. It is, therefore, very necessary to take this into consideration in judging. The wealth of good juicy meat on the most valuable parts should be most carefully considered.

But this is not all. The breeder and feeder wants the most valuable carcass in the least bulk and he wants it made at the least possible cost to the feeder. It may be said to this that it is impossible to judge at what cost the animal has been placed in the show ring and that therefore this can not enter into competition. Let us consider the question carefully. There is no good judge but will feel the hide of the animal before him. This is not for the value of the hide, which may be sold regardless of quality at so much per hundred pounds. Kindly handlers feed

better than others. Every feeder knows this, and, therefore, a good hide is worth much in the show ring. Here come in many valuable points that long years of development have emphasized. In the Galloways good hides are valuable for robes, and the quality, length and appearance of the hair has to be considered. Soft hair wears better in a robe than the long, coarse kind. Wavy hair of a brownish tinge is preferred to very curly jet black coats, not because of the very modern idea of making robes but because it was found out a hundred years ago "that cows whose hair is curled are slow feeders." That was a good reason at the time and holds good still, but the modern judge may know that this point is preferred to another without being at all familiar with the reason that first brought in the fashion. Certain it is that to all these minor points there is a value and they have not been adopted and become familiar in the past without a good and tangible cause. They change just as our habits and preferences change in other things.

In judging the modern type should always have the preference in any of the beef breeds and that adopted and acknowledged by the best breeders in any of the beef breeds should be the type to be placed first by the judge. Those who are ignorant of these things should not be asked by Fair managers to act as judges, and those asked should not accept and act without being able to do the work in a satisfactory manner. Each

breed has its own code of points and these should be adhered to in all cases. Only thus can our Fairs be of value to the general public and have good work done in the judging rings.

Fitting Sheep for Export

By John Jackson, Abingdon, Ont.

This is a very important matter, as there is no animal so well adapted to clean and keep up the fertility of the soil as the sheep. Nor is there any other stock on the farm that will give better returns for the food consumed if properly managed than the sheep. But the man who so over-estimates the possibilities of the sheep as to be content with the culls of some inferior flock, bred to a cull ram picked up at a small price, and then allows them to shift for themselves, picking the roadsides, bare lanes and fallows in summer, with the shelter of a rail fence, and straw stack to pick at in winter, will not be long in realizing the fact that there is no money in this way of handling sheep.

SHEEP DO NOT DETERIORATE IN CANADA.

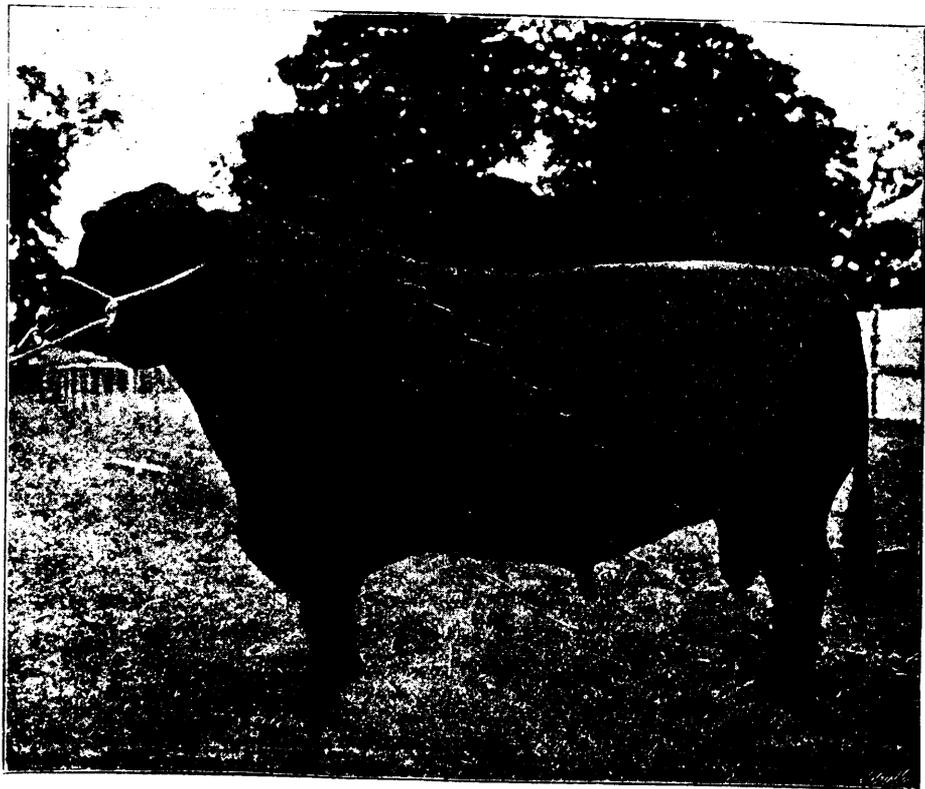
I am not one of those who believe that sheep, properly managed, will deteriorate in this country. But when the hay and coarse grain are being sold off the farm year after year, without an equivalent return in manure, the farm must deteriorate and become poorer each year, and it's no wonder that the cry of such is that crops don't yield as they did in years gone by. I believe there is no better way of checking this waste of fertility and restoring it to farms already wasted than by raising and fitting sheep for the export trade, and if more were raised that shippers would have less trouble in picking up a load better prices would be obtained.

BREED RIGHT.

To insure success we must begin before the sheep are born, by selecting ewes of the right sort to breed them from. These need not of necessity be pure bred, nor of any particular breed. The best of the common stock of the country are suitable for this purpose. If they have a good dash of Down blood in them so much the better, but the selection of the ram is of vital importance. He should be a pure-bred sheep, not simply because he is pure-bred and registered as such, as there are plenty of these very inferior, and not fit to breed mutton sheep from. A few dollars extra for a good ram is money well spent. It is not necessary to pay a fancy price, he may be lacking in some of the less important points, such as the shape or size of ear, the color or the way he is woolled on the face or legs. He should be full of quality as regards the points of a mutton sheep, however. He should be strong and masculine in character, on short, strong, well-set legs, wide and level back, with good quarters, and especially the hind quarters. He should be pure-bred to insure the reproduction of his good qualities. Perhaps there is nothing that fills the bill better than the Southdown, others may think differently. To insure a good crop of lambs ewes should be in good thriving condition when coupled with the ram, which may be about the first of November. The labour of caring for the flock in winter is very light indeed. A good, deep, open shed with a yard attached is all the shelter required. A constant supply of salt and pure water is needed. The food may consist of well-cured pea-straw cut on the green side, and if a few peas are left in threshing they will not be wasted. A few roots give variety. As the season advances, good, well-cured green cut clover hay should form the bulk of the ration, and as they near the lambing this should be supplemented with a small allowance of bran and oats, till the grass is ready.

FITTING THE LAMBS.

The lambs when from two to four weeks old should be docked and all ram lambs castrated. To fit these for export they should have the run of fresh pasture and frequent change from one lot to another is good. Rape, corn, peas, or other green food may be provided in case of extreme drouth. Rape should be green for fall feed. A good way is to sow a pound or two of rape seed in the oats. This will make good sheep pasture after the oats are harvested. If lambs have plenty of rape and fresh pasture nothing more is required until winter approaches, but if pasture is bare they should be fed a small feed of grain of whatever kind is the cheapest at the time. For winter food, clover hay and roots, with say a pint of grain mixed with bran and nutted oil cake, if the price justifies it, is good. If to be shipped going on grass the grain feed should be increased when corn may be added for the last month or six weeks, and last but not least, keep them clean and tidy. The use of the shears to smooth up the outside makes them attractive to the buyer.



Aberdeen-Angus Bull. Proud Duke of Ballindalloch, 1st Prize and Champion Royal Show, 1899.

Notes on Our Bacon Trade

By G. E. Day, Prof. of Agriculture, Ont. Agr. College

A great deal has been said and written regarding the production of export bacon, yet withal the subject is an extremely unsatisfactory one with which to deal. There is so much confusion of ideas regarding right and wrong methods of breeding and feeding swine, and so little definite proof that any of the propounded theories are correct, that it becomes a difficult matter to approach the subject with unprejudiced mind, and to separate what is absolutely known from what is purely theoretical. Our experiment stations are busily engaged investigating problems which vex the packer and the farmer; but investigations require time, and as yet our knowledge is anything but complete. All that can be attempted at the present time is to present for consideration a few leading points in connection with our bacon industry, in the hope that they may tend to bring about a more rational conception of the whole matter.

STATUS OF THE CANADIAN BACON TRADE.

In the first place it may be assumed that the market of the world for bacon and pig products is England, and comparatively few countries occupy an important place in this market. Loudon M. Douglas, in the Journal of the Royal Agricultural Society, places the leading bacon-curing countries in the following order of importance: 1. The United States; 2, Canada; 3, Denmark; 4, England; 5, Sweden. The same writer goes on to say: "The principal source of our supplies of cheap bacon is in the United States;" and in another place he states: "It is safe to say that the coming rival of all other countries in the production of bacon is Canada. . . . 'Pea-fed Canadian' is fast displacing Danish meats and taking the leading place in the English market. No doubt the supplies from Canada will continue to increase by the same leaps and bounds as of late years, so long as the Dominion farmers devote as much attention to the *quality* of hog produced." Such is the view

The old Greeks said that a man had two ears and one mouth, that he might hear twice and speak once; and there is a great deal of good sense in it. You will find that if you will simply hold your peace you will pass over nine out of ten of the provocations of life.—Henry Ward Beecher.

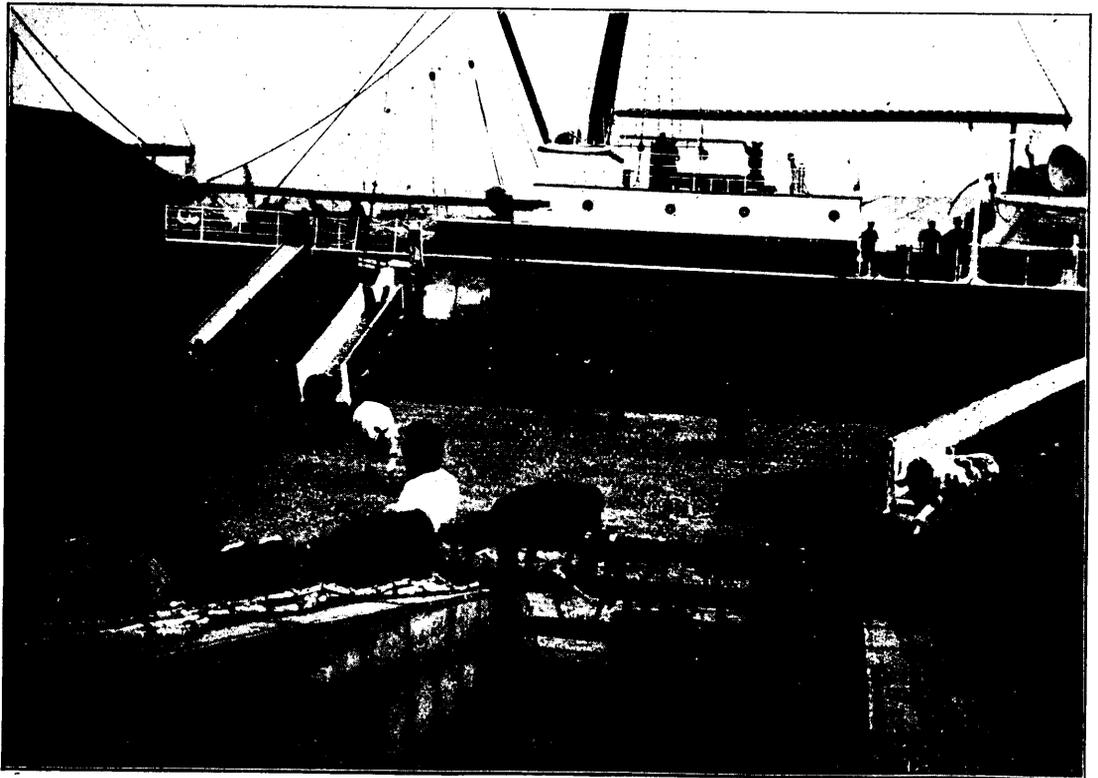
of this prominent English authority, and the quotations convey one or two ideas which will bear enlarging. The first point to be noticed is that the United States supply England with the great bulk of her *cheap* bacon. Canada, on the other hand, aims to supply an entirely different class of bacon, and hence we find that the Canadian farmer

almost invariably receives a higher price for his hogs than the American farmer. It follows, therefore, that the bulk of American bacon does not come into direct competition with Canadian bacon, and the United States can hardly be classed as our rival in the English markets. Denmark, however, is Canada's greatest rival in the English markets, since Canada and Denmark both make a specialty of the same kind of bacon. If these facts are borne in mind, they will clear up much of the confusion regarding the reason why Canadian packers require a kind of hog entirely different from that required by American packers.

The second thought worthy of consideration is that regarding *quality*. If we are to maintain our lead over the United States, and compete successfully with Denmark, we must pay special attention to quality. It is not what we think, but what our customers demand that must govern our efforts to maintain and improve our position in England. Just so soon as we decide that what is good enough for the Americans is good enough for us, and should be good enough for any Englishman, just so soon will we lose our present profitable trade and become competitors of the Americans. Let any farmer study the American market

prepared for the breed. For example, a standard of excellence which calls for a heavy jowl, short, thick, arched-neck, broad shouldered and proportionally broad back, may meet the requirements of the American packer, but is just the opposite of what is wanted by the Canadian packer. The standard of excellence alluded to has been prepared by American breeders for hogs intended for the American trade, and since the American trade is entirely different from the Canadian trade, it follows that the same standard cannot be used for both. Therefore, if all our breeds of swine are bred to suit the Canadian packer, it will lead to a departure from the original standards of excellence and the evolution of a distinctively Canadian type in the case of some of the breeds.

It is not intended to dictate here what should or should not be done. The statements in the preceding paragraph are merely logical conclusions from our present knowledge of facts. It must not be forgotten, however, that the great bulk of market hogs are not purebred, but consist of grades and crosses, and the value of the various breeds for crossing purposes is something which has not yet been systematically tested. An animal may not be suitable for our



Unloading Cattle at the English Docks.

(By courtesy of *The Breeders' Gazette*.)

reports from time to time and compare the prices paid for hogs with those paid in Canada, and he will realize the importance of maintaining the quality of Canadian bacon and retaining our distinctively Canadian trade.

BREEDS OF SWINE.

In three years work with different breeds at the Ontario Agricultural College, the Yorkshires and Tamworths have been most highly commended by the packers; the Berkshires have come next, and the Chester Whites, Duroc Jerseys and Poland Chinas have generally been seriously faulted. The representatives of the three last mentioned breeds which we marketed, together with some of the Berkshires, would have been very good hogs for the American trade, but, on the whole, they did not meet the requirements of the Canadian packer. It is true that individuals among these breeds proved quite satisfactory for our export trade, indicating that it would be possible to evolve a type from these breeds which would be suitable for Canadian export bacon; but in forming such a type the breeder would be forced to depart from the standard of excellence

export trade in itself, but when intelligently crossed, its progeny may give every satisfaction. The question of crossing, however, cannot be gone into at present, since there is a lack of fully substantiated evidence on which to base judgment, and therefore its discussion would be largely a waste of time.

THE FEEDING PROBLEM.

It is claimed by some that any hog can be made suitable for export if properly fed. The fallacy of this argument is so apparent that it seems scarcely worth while to devote any attention to it, and yet the statement has been reiterated so often that perhaps it is worthy of a passing notice.

The striking differences presented by the carcasses of the animals slaughtered in the course of our experiments should be sufficient to convince any thinking man that food is not the only factor to be considered in producing export bacon. Given the wrong type of hog, no man can make it produce a firstclass carcass however skilful he may be. But while this is true, it is also true that the system of feeding has

much to do with the quality of bacon. An inferior type of hog can be improved and a really good hog can be spoiled by following certain methods of feeding, and therefore breeding and feeding must go together in the production of firstclass bacon.

One of the most serious problems with which our packers have to deal is the quantity of "soft bacon" which comes to hand. In a soft side the fat lacks firmness of texture, being soft and flabby. The fatness of the animal seems to have little or no influence upon the softness or firmness of the fat, and among the hogs we have marketed there has been more softness among the carcasses which were too lean than among the over-fat ones.

Investigations regarding this matter are not by any means complete, but the work done up to the present would indicate that softness is not due to any one cause, but may be traced to a variety of causes. A very brief summary of the results of investigations to date may be of interest.

1. Danish investigators found that corn tended to produce inferior quality of bacon by injuring the texture of the fat. This was especially noticeable when the corn feeding was commenced at an early age and continued to the finish.

The feeding of dairy by-products with the meal ration apparently has a tendency to correct the evil. Foods which tend to produce an excessive development of fat, especially in young animals, are apt to cause softness, and this is, no doubt, the reason that corn has proved injurious, since it is essentially a fattening food. After a hog reaches 100 lbs. live weight, provided that he has good muscular development, there seems to be much less danger from corn feeding. It would appear, therefore, that it is during the earlier stages of growth that especial care is necessary.

As stated before, investigations are anything but complete, but the few notes furnished herewith may start some-one thinking.

Raising Calves for the Dairy

By J. W. Hart, Supt. Eastern Dairy School, Kingston, Ont.

The very best ration for the growing calf is provided by Dame Nature, and to secure the best results her methods must be imitated as closely as possible where the calf is to be raised by hand. For the dairy the treatment must be entirely different from that practised if beef or veal is



The Milkmaid's Household.

2. In our experiments at Guelph, finishing well grown hogs on corn did not appear to cause any injury. These hogs, however, weighed about 100 lbs. live weight before the corn feeding commenced. More extended trials, commencing with young pigs, are under way but not yet complete.

3. Exclusive grain feeding (without corn) of pigs confined in pens resulted in marked softness in many cases.

4. The feeding of dairy by products with the grain ration (no corn) to pigs confined in pens, gave a fine quality of bacon.

5. Hogs that had had abundant exercise until they reached 100 lbs. live weight, produced a good quality of bacon when finished on various rations, including corn.

6. Unthrifty hogs produced particularly soft bacon.

Now, let it be distinctly understood that it is not claimed in this article, nor is it even insinuated nor implied that corn will not cause softness in bacon. On the contrary, there is strong evidence that corn has a tendency to produce softness. But it must also be remembered that corn feeding is not responsible for all the soft bacon, and that soft bacon may result when neither corn nor clover has been fed. Lack of exercise accompanied by exclusive grain feeding is doubtless a common cause of softness.

wanted. To raise the best calf for the dairy it is possible to improve on whole milk as a ration and skim-milk as a basal food to grow a better heifer at less cost. Under domestication the quantity of milk yielded by the cow has increased until, from an animal giving only sufficient milk for the nourishment of one calf she is capable of yielding food sufficient for two or three. Nor is this all; the composition of the milk of some of the leading dairy breeds has been so modified by selection and environment that it is no longer suitable as it comes from the cow as food for any calf, much less for the calves intended for the dairy.

On farms where dairying is one of the leading pursuits constant improvement in the quality of the stock should be the fixed aim of the farmer. One of the chief means to this end is the raising of the heifer calves from the best cows. I do not consider it best for either cow or calf to have the cow milk directly up to calving, though the majority of dairymen will not need to take any extra precautions to avoid this extreme. On the other hand, atavistic tendency of the cow toward the primitive type giving only sufficient milk for the needs of her young, should be discouraged by the effort to prolong the milking period. A six weeks' rest allows the cow to recuperate her energies

and ensures a healthy and vigorous calf. If the calf is weak and puny it is better to knock it in the head at once. For the first few days of its life the calf should get nothing except its own mother's milk. The colostrum or first



A Typical Danish Creamery.

milk is rich in all the food ingredients needed for a vigorous start in life, and provides besides the stimulating and lubricating qualities needed to start into operation the complicated and delicate digestive machinery of the youngster. I usually prefer to teach the calf to drink as early in life as possible; the longer this is postponed the greater the difficulty and injury in rupturing the bond of affection between cow and calf and supplanting the mother in the regards of the calf. For whatever purpose the calf is designed, it should be fed on warm, whole milk during the first week or ten days of its life. After this time the butter-fat of the milk, being too valuable, should be replaced by some cheaper heat and energy-producing nutrient, and the fact should never be lost sight of that the calf is being raised for the dairy, and is to prove superior to some cow the place of which it will eventually take. Early in life its energies must be directed in the dairy channel, avoiding the fattening tendencies of a whole milk diet.

THE CHEESE FACTORY CALF.

Among the patrons of cheese factories the custom has been to have the cows "come in" early in the spring so as to allow of some butter being accumulated and the calves to get some milk before the factories open. Where the winter creameries have been established the calves have a better chance, as this plan encourages the production of milk in winter. Where some of the best cows are bred so as to "come in" in the fall and early winter not the least of the advantages of winter dairying is having a supply of skim milk for the calves. These calves will be ready to meet the grass in the spring time, and the result of the first year's growth will be far more satisfactory than where the calves come late in the spring.

At the best whey is an unsatisfactory substitute for milk for feeding calves, young one's especially. Before giving them the whey in the condition in which it is fed on many farms, I should advise some quicker acting poison as a more humane method of killing the calf.

THE PRIVATE DAIRY CALF.

In the private dairy, or cream gathering creamery, where any gravity system of creaming is followed, the skim milk contains a considerable proportion of the original butter fat. If fed sweet and warm the result will be a better calf from

the dairy standpoint than if the calf had followed the cow. By throwing a little cornmeal, oatmeal or fine wheat middlings into the feed pail just as soon as the calf has finished drinking, it will soon acquire a liking for other foods besides milk, and the thriftiness of the calf will afford pleasure to the eye and the promise of profit to the owner.

Where for economic reasons the separator has been introduced the skim-milk is deprived of all except the merest trace of fat. For satisfactory results in feeding the fat abstracted must be replaced by some cheaper form of heat and force producing food. Theoretically the addition of some of the cheaper animal fats or vegetable oils would appear to supply the deficiency caused by the removal of the butter fat in the cream. In practise, however, it has been found impossible to add these to the milk so as to form a satisfactory ration. Linseed meal especially the O. P. meal has given satisfactory results in combination with skim-milk. Flax seed, whole or ground, a feed which can be grown on any Canadian farm as easily as oats, is one of the best adjuncts to skim-milk in feeding. It should be cooked to a jelly and added to the milk. Cornmeal mush is an excellent feed in combination with skim-milk.

OVER FEEDING INJURIOUS.

Over-feeding is injurious, and a common mistake is to suppose that because the fat has been taken out of the milk it is a poor food, and the lack in quality may be made up by an increased quantity. Another trouble with skim milk is that it is too often filled with germ life and its products and sets up disorders of the digestive tract, precisely what often happens the bottle-fed baby the first summer of its existence. To avoid these troubles care should be taken not to over-feed, and the most scrupulous cleanliness should be practised. As much pains should be taken in washing the pails from which the calves are fed as any other dairy apparatus. Until the calf is two months old the temperature of the milk should not vary more than five degrees either way, from the body temperature, about 100 degrees. To find out the temperature of the milk the thermometer should always be used. Calves will thrive better if fed three times a day, but owing to the pressure of other work on the farm they are usually fed twice, and if fed at regular hours soon become accustomed to receiving only two meals.

To teach the calf to drink let it fast twelve hours, then take about two quarts of warm milk directly from its mother. Hold it in front of the calf. Put the first two fingers of the disengaged hand, palm uppermost, in the



Interior View of a Danish Creamery.

calf's mouth, allowing it to suck. Now quietly lower its head until the knuckles are below the surface. Spread the fingers a little so that the calf can suck the milk through

the canal formed between them. As soon as it gets a good swallow of the milk gradually withdraw the fingers. If young and hungry the calf will usually learn to drink in one such lesson. With refractory individuals a little patience will be required.



A Model English Creamery.

Ten pounds of milk a day is sufficient for the calf the first week. At two months it should be fed about twenty pounds. Twenty-five pounds a day is about the maximum quantity of milk to feed any calf. If the slightest tendency towards scouring is noticed, reduce the feed and give a couple of raw eggs with the shells.

The calf will do better on milk containing $2\frac{1}{2}$ per cent. fat than if fed 5 per cent. milk, and in some cases it may be best to give half skimmed milk from the start. For the first two weeks no solid food should be given in the milk. After that a tablespoonful of flax seed or Indian meal cooked may be given. The quantity may be increased as the appetite and digestion indicate, until a quarter of a pound is fed at four months.

BULKY FEEDS.

The calves should be allowed the run of a small pasture when the season will permit, and at other times should be fed some early cut hay and grain. Encourage them to eat bulky foods, ensuring a capacious stomach and good digestive ability.

It will be better to feed the calves separately, and to keep them separated for a short time after feeding. Pure water should be where they can help themselves at all times.

All the nipples and other devices for feeding that I have tried I have soon discarded, on account of the tendency to clog with solid food, and the difficulty of keeping them clean.

Butter and cheese makers should insist on having sound milk to work with. Where the patron supplies it he has a right to demand that the skim milk be returned sweet, and the whey in a satisfactory condition for feeding.

Breeding to the best dairy sires available, the selection of the best calves and their proper feeding are the three important steps in improving the character of the herd, and increasing the returns per cow per acre.

Cheese and Butter for Export

By H. H. Dean, Professor of Dairying, O.A.C., Guelph.

Cheese is still foremost among the many branches of the dairy industry, and may be placed first in any article on dairying, but the revival of the live stock trade and the demand for Canadian creamery butter in Great Britain are creating an interest in butter-making which will doubtless cause it to forge ahead of, or at least be not far behind, the cheese industry of Canada.

Owing to the great variety in tastes, common to Britishers the world over, it is very difficult to establish a standard in these two articles of food. They are unlike tea, sugar, bread or other staple foods in that there is more demand for variety. Again, cheese and butter are products of fermentation, which we have not yet learned to thoroughly control; hence, in spite of the greatest care, it is very difficult to get a uniform quality for special demands. No two days' make of cheese or butter are exactly alike. They may appear to be, but close examination reveals differences which the maker cannot entirely overcome.

In general, however, we may say that a good Cheddar cheese is made up of good flavor, firm, waxy, meaty, close body and texture, *even* color and a real attractive appearance. The English language fails in terms to describe flavors, hence each person must learn for themselves, by contact with a number of cheeses, what is meant by good flavor. The other qualities are more easily described and learned.

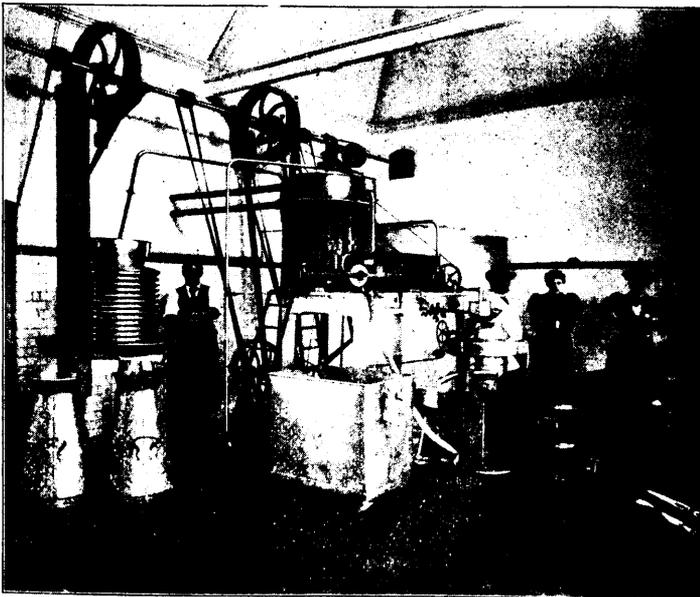
FLAVOR.

The chief things which affect flavor are the cow, the food fed to the cow, the care given the milk, method of manufacture and time and temperature in curing. With reasonably good milk and ordinary care in the making, temperature in curing is the most important factor affecting flavor, body and texture. So far our experiments at the O.A.C. dairy indicate that a higher temperature, 65 to 70° , gives more satisfactory results for spring cheese, and a lower temperature, 60 to 65° , is better for summer and fall cheese. Owing to the difference in seasons and the different character of milk in various places, much work needs to be done in this connection before we can speak very definitely. There would seem to be a balance of testimony in favor of the principle: the lower the temperature at which fermentation will take place the better will be the flavor, though local and special circumstances may modify this to some extent.

BODY AND TEXTURE.

Closeness, body and texture are affected by the per cent. of fat in the milk, rennet, and temperature in cooling and curing, handling of the curds, salt and pressure. Some experiments made by Prof. Lloyd, of England, indicated that liming the soil pastured by cows gave a firmer body and texture to the curd as compared with curd from the milk procured on soils to which no lime had been applied.

A large quantity of rennet tends to produce a weak-bodied cheese, too much acid a harsh texture, too low a



Interior of a Model English Creamery.

temperature in cooling produces weakness, and too high a temperature stiffness. 96° to 98° is generally considered about right—though curds from milk containing four per

cent. fat and over should be cooked to 100° to insure a firm body.

A low temperature in curing (60° to 65°) tends to produce a firm, close, silky body and texture, while above 70° produces open cheese of a "gritty" texture, due to the loss of fat, which occurs when cheese is exposed for any length of time to a temperature of 75° to 85°. There is also at this high temperature a probable disassociation of the mechanical mixture of casein and fat, and though a cheese might analyze as much fat as when cool, the proper mechanical mixture has been destroyed. Rough handling of the curd at cutting and during the "cooking" may also destroy body and texture. A cheese buyer said to the writer recently, that he considered rough or improper handling of the curd in the early stages to be the main cause of so much "stiff" cheese in the spring of 1899. (This is doubtless one cause, but owing to the fact that makers were so badly bitten in '98 by salesmen *holding* the cheese, in '99, when buyers *wanted* cheese "quick," they made the cheese to *hold* instead of to sell and got them "too light." Makers would do well to study the markets and when cheese are in good demand make them to cure rapidly, and when the market is slow make them to "keep.")

Too much salt produces stiff cheese, while too little salt gives a weak body and cheese that lacks flavor. Lack of pressure tends to openness. Cheese should be pressed 20 hours where possible. The "gang" press is just as favorable for producing close cheese as the "upright" and is much cleaner and handier.

NO STANDARD OF COLOR.

Owing to the great variety of demands for color in cheese, there is no standard. Some British houses supply six or seven, or more, different shades of cheese to their customers. The color of cheese may vary from very pale, sometimes called "dead white," to a "bricky red," and have all the shades between these two extremes. The main point is evenness. "Streaky" color is not liked. "Flying of the color" is becoming a common trouble in colored cheese. It is to be hoped that the demand for colored cheese will grow less each year, and that finally it will cease. The main causes of "streakiness" are uneven mixing of the coloring water with the milk, and too much acid while the curd is in the whey. It may also be caused by an organism which attacks the coloring in the cheese, giving it a mottled or "streaked" appearance. This trouble does not appear until the cheese are about two weeks or two months, or more, old. So far we have not seen this discoloration in white or uncolored cheese.

While discussing this question of colored cheese, I beg permission to quote from Prof. Oliver's English work on dairying, milk, cheese, and butter, p. 112. "Why is annatto used? Because the British cheese consumer is ignorant and gullible. He knows that the yellow milk of the Jersey is richer than the whiter milks of other breeds, and so gets the notion that the butter or cheese, which is yellow or red, must be richer than the paler products. He will eat a cheese made from partly creamed milk, and rejoice in its richness, because it is colored! The trade then bows to his demand for a colored cheese, and when the demand is passed on, the dairyer bows to his trade. So the consumer is gullied to order. There can be no mistake about the folly of the whole proceeding. Not one particle of food value does it add to the cheese; it is troublesome at times, and always nasty. We sincerely hope it will disappear from the dairy."

NEATNESS AND STYLE.

Stylish cheese always sell more readily than slovenly ones. As a moderately good-looking woman will give the impression that she is handsome when becomingly dressed, so a well dressed cheese gives a buyer the impression that good quality may be found beneath the cotton gown and cap which fit neatly.

EXPORT BUTTER.

For renovating wornout farms, and for improving the live

stock of Canada, butter-making is much better adapted than is the manufacture of cheese. Only heavy, rich soils can bear the drain of the cheese factory on soil fertility. In all sections where the land is light or worn out the creamery business should be fostered. Where live stock have become "run down" the creamery will aid in restoring vigor to the herds. The wisdom of fostering the creamery industry is also seen in the demand for Canadian butter, and consequently a higher price for Canadian cheese. Those factories which make butter for three to six months of the year are doing a good work for the cheese trade as is evidenced by the good demand for cheese this year. If our people would whet the appetites of cheese consumers by making less, and of a finer quality, and produce more butter it would be better for all concerned. Though the actual cash returns from the creamery may not equal those from the cheese factory there are other things to be considered, such as the value of the skim-milk, and maintenance of soil fertility, which in most cases will counterbalance the cash difference. Let us then encourage the export of a creamery butter that the grains of golden cash may fill the pockets of our dairymen in return for the golden grains of butter produced by the soil, water, air, sunshine, labor and skill of Canadians and their cows.

GOOD BUTTER.

Good butter consists of mild, sweet, pleasant flavor; firm, pliable, waxy spread on bread; grain and texture, an even color, mild salting, neat and tasty finish. Given good milk, the chief thing which determines flavor in butter is the ripening of the cream. By the adoption of Pasteurization and the use of pure cultures, the buttermaker will be able to control flavor almost entirely. He may not be able to fully overcome feed and other flavors, but when he thoroughly masters cream ripening he will be independent of other conditions to a large extent. So far, this question has not received that attention which it deserves at the hands of Canadian buttermakers. We have trusted too largely to natural souring, or the use of buttermilk and cream to give the desired flavor. Many times this gives satisfactory results, but in many cases it fails, and one lot of bad butter may be propagated in and through several churnings before the maker notices it, by using buttermilk and cream for ripening, whereas Pasteurizing the skim milk for a starter is a more sure method of attaining satisfactory results. Pasteurized cream butter has better keeping qualities, and is better suited for the export trade, as this trade requires considerable time from making until it is consumed. It also produces a milder flavor, which suits British markets better than the "bouquet" aroma so much desired in home markets.

GRAIN AND TEXTURE.

The grain and texture of butter are largely determined by the temperature at which the cream and butter are handled during the process of manufacture, and also by the temperature of the butter when examined or used on the table. It is true that the cow and her food influence "grain" to some extent, but temperature in handling the product is the main factor which governs the quality of adaptability to spread on bread. A temperature of 60° to 65° for ripening the cream, cooling to 50° for some time before churning, and churning at 48° to 52° has given us the most satisfactory results.

A very pale color is liked for export butter. We have created a false taste for highly colored butter in this country. The highest class butter in Britain is uncolored, and we should follow their example in this respect—at least we should cater to their taste. Pasteurization, non-exposure to light and mild salting, tend to produce pale butter.

About one-half ounce of salt to the pound of butter is a safe rule. None but clean, pure, fine salt should be used, of which we have an abundance in Canada. No preservatives of any kind, other than salt, should be added. The practice of soaking parchment papers in formalin is a doubtful one. If boxes are made from well-seasoned tim-

ber, and are kept in a clean, dry place, there should be no trouble from mould.

The 50-pound square box, about one-half inch smaller in the bottom than at the top, is the most suitable package. These boxes should be coated on all inside parts with paraffine wax, and be lined with heavy, clean parchment paper, which has been soaked in brine. The butter should be packed in firmly so that when the package is "stripped" the block of butter will show a uniformly close side without holes, in which the brine and butter milk collect, giving an unsightly appearance to the goods. A light, salt paste on top of the paper keeps the top moist and excludes the air. A double lid is of no advantage to the butter.

KEEPING BUTTER.

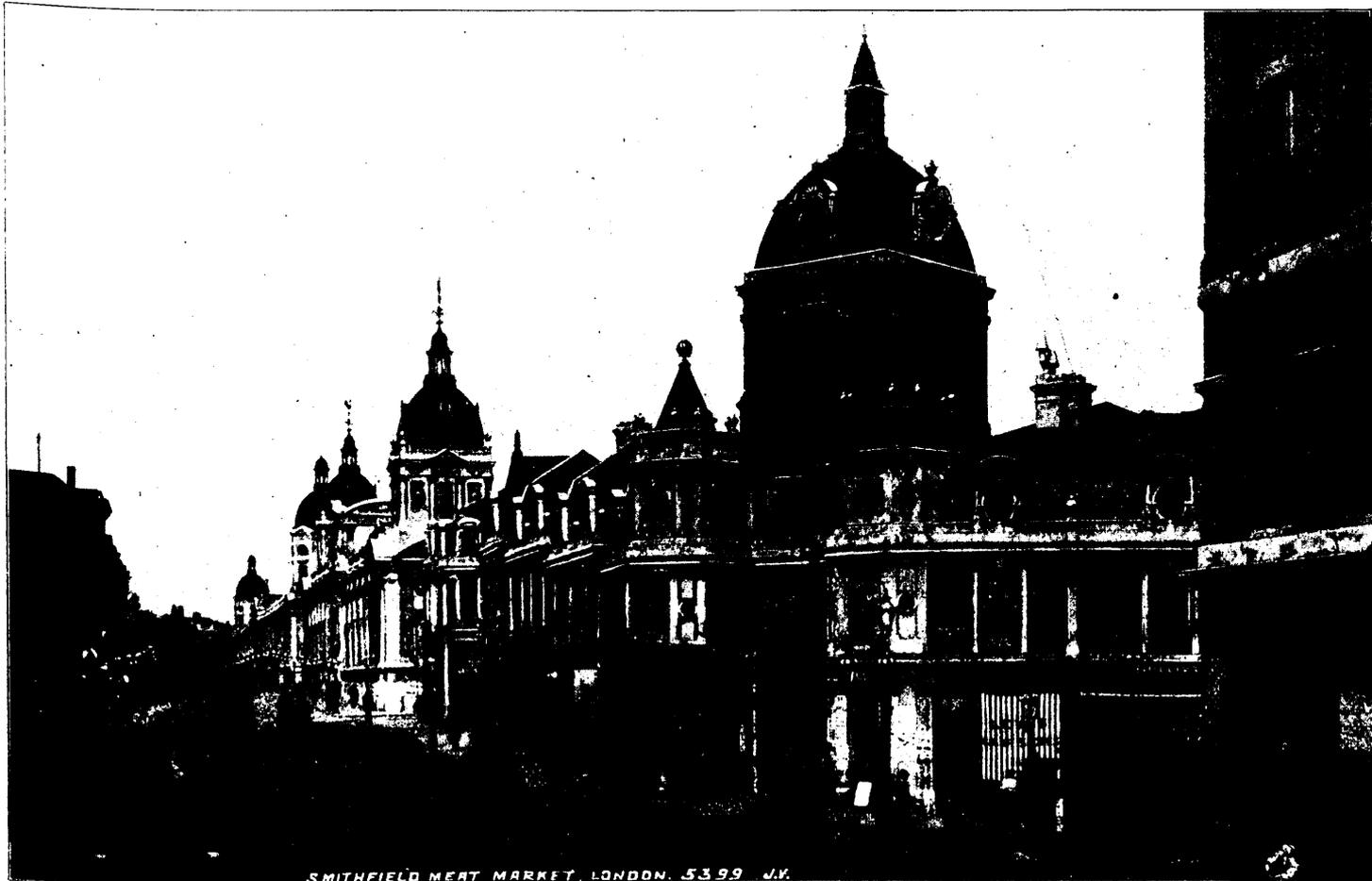
The butter should be held below freezing point if possible when kept for any length of time. The better plan is to ship once a week to reliable firms. Dealing directly with importers in Great Britain is becoming popular with our

Eggs for Export

Requirements of the British Markets.
Large Eggs and to Arrive with Flavour Intact. All Imported Conditions. Breeds Which Lay Large Eggs

By A. G. Gilbert, Manager Poultry Department, Experimental Farm, Ottawa.

There is a very large market in England open to our shippers for Canadian eggs of large size and undoubted freshness. Correspondents in England say that the drawbacks hitherto to a rapid development of the Canadian egg trade have been bad packing and eggs of impaired flavor, *i.e.* stale eggs. There should be no room for complaint for



SMITHFIELD MEAT MARKET, LONDON. 5399 J.V.

Smithfield Market—Where Butter is Chiefly Distributed to London Retailers.

largest creameries. This tends to bring producer and consumer closer together, and is liked very well by those who have adopted it systematically. Jute sacks to cover the boxes are used by some; others object to the sacks. They, no doubt, keep the package clean during transit.

To hold the trade we have, and to increase it judiciously by producing the finest quality of cheese and butter should be the aim of every Canadian dairyman, and of all those interested in the welfare of Canada.

"If I go ter school terday de teacher'll lick me fer not preparin' my lesson; an' if I stay home me mudder'll lick me for not goin' ter school. Now, either I got ter go or stay home. But if I go an' de teacher licks me an' mudder finds it out, me mudder'll lick me fer not doin' my school-work; an' if I stay home an' me mudder licks me de teacher'll lick me termorrow for being a truant! Gee! Guess I'll go ter sleep!"—*Nashville American.*

either reason. With the cold storage facilities, now in operation, our eggs should arrive in prime condition, if positively fresh when shipped. As to the packing that is a matter strictly within the province of the shipper and it is surely to his interest to send his goods so as to assure of their safe arrival and presenting the most inviting appearance. But it is with the farmer we deal with, on this occasion, rather than the packer and shipper.

REQUIREMENTS OF THE ENGLISH MARKET.

It is well though for our farmers to become acquainted with the requirements of the British markets and how he can best meet them. We learn then that the British markets require:

- (1) Large eggs, weighing seven or eight to the pound.
- (2) To be strictly fresh when shipped and also on arrival.

As to the latter condition, it may be at once said to be of the most vital importance. It must be borne in mind

that if the flavor of the egg is at all impaired before going into cold storage prior to shipment, that no subsequent treatment can restore the lost flavor. The same trouble is experienced in our home markets, which are, comparatively speaking, at the very doors of our farmers.

CAUSE OF THE TROUBLE.

The cause is undoubtedly due to farmers who have small flocks of fowls keeping their eggs until they have enough



Creamery at Charleville, Ireland.

to make it worth while bringing them to market. Meanwhile the fresh laid eggs have become stale, and it is only the eggs of the later days that are really the desirable article. Such men cannot realize too quickly that they should either bring in their eggs to the purchaser more frequently, or keep a larger number of fowls. A correspondent in Montreal wrote some time ago: "I want no eggs from any man who has not a large flock of layers, for I want none but strictly new-laid eggs for my customers. I wish shipments to be made at least twice per week." My correspondent sized up the situation correctly. The man with 150 or 200 hens is likely to be in a position to ship a number of new-laid eggs twice per week in winter or summer, while the farmer with three or four dozen laying stock is not. But it may be that a solution of the difficulty in the latter case may be had in purchasers calling upon the small holders at short intervals.

ALL IMPORTANT CONDITIONS.

Be that as it may, the first and all important condition in developing a successful egg trade with Great Britain is to ship none but strictly fresh eggs, and they must come in that state from the farmer or producer. As to the first requirement, namely, eggs of large size, that may be met by the farmers keeping the breeds which lay large eggs. The subject may as well receive the practical attention of the farmers now as later. There is a bill now before the House of Commons compelling the selling of eggs, and, I hope, poultry, by weight. Such a measure cannot come too soon for the good of the farmer, the community and the British egg trade. Such a bill will at once direct the attention of our farmers to the breeds which lay the large eggs and to the development of the large egg-laying strains of breeds, some strains of which at present lay eggs of under size.

A SOURCE OF MISCHIEF.

There can be no doubt that breeding for fine feather for show purposes, at the expense of egg-laying quality, is responsible for much mischief in this direction. "Oh!" said a show poultry breeder to me not long ago, "I do not care how few eggs my hens lay as long as I can get the feathers to secure the red ticket—first prize." Let us hope that there are not many such. Incalculable mischief is being wrought by such men. It is to the farmers then we turn to develop the strains of Plymouth Rocks, Wyandottes, Brahmas, Cochins, etc., which are good layers and

rapid flesh formers. It is the layers of large eggs and the rapid flesh makers that our farmers must develop, and each can be done and is being done by skilful breeders by careful selection. Dr. Wychoff, of Croton, N.Y., has by careful selection from year to year of his best layers, and breeding from them, a large number of white Leghorns which average 180 to 200 eggs per annum each. Mr. A.G. Silberstein, of the Harvest Farm, New Jersey, has succeeded, by the same methods, in securing a strain of Light Brahmas which lay 156 eggs each per annum. Ours can do the same.

LARGE EGG LAYING BREEDS.

Breeds which lay large eggs are as follows: Black Minorcas, Andalusians, Black Spanish, some strains of White Leghorns, White Crested Black Polish.

EGG LAYERS AND FLESH MAKERS.

Breeds which lay eggs of medium and large size and are good table fowls are:

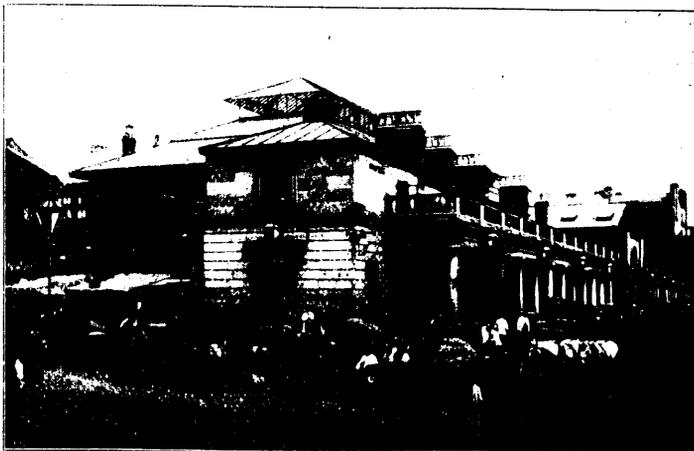
Plymouth Rocks, Light Brahmas, Houdans, Wyandottes, Langshans. Dorkings are well known for their superior table qualities, but they are not prolific layers nor are their eggs of large size.

Eggs of large size are also in demand in our large cities. Montreal retailers pay more for large eggs than small ones. It is well for our farmers to give the subject their immediate attention. If we desire to capture the British market our farmers cannot begin too soon to produce the desirable article and place in the hands of middleman or shipper in the desirable condition of freshness.

Fitting Poultry for the British Market

By W. R. Graham, Manager Poultry Department, Ontario Agricultural College, Guelph.

Experience has taught us that whatever food products we wish to sell to advantage in the British market, must arrive there in a form suitable to the tastes of the English people. No matter what our tastes or inclinations may be, we must consider the tastes of the consumer if we wish to please the buyer and get the top price. We are informed that the British market demands more ham and chicken and less cheese. This being the case it is to our interest to produce what is wanted, provided the remuneration is sufficient. The British market demands a fowl well fattened of fair size, and of a light colored flesh. To us this may seem like a step backwards, because our market favors a yellow fleshed fowl. We can, to a certain extent, please



Covent Garden Market, London, England.

both markets by following certain lines of feeding. One mixture of food may go to produce a yellow colored flesh, while another to produce the light color. No doubt many think this impossible, but nevertheless it has been demonstrated by experiment. It has long been known that the feeding of yellow corn to fowls of white plumage during

the moulting period had a tendency to influence the new plumage towards a yellowish tinge rather than the pure white. The corn also influences, to a certain extent, the color of the skin. Skim milk, oats and buckwheat have an opposite tendency. Therefore we have, to a limited extent, a control of the color. Certainly it is impossible to overcome nature altogether. It is indeed much easier to produce the desired color from a fowl which has naturally these characteristics, yet we are obliged to face the facts that the British markets demand a brown egg, and these are not associated with light flesh fowls. We cannot influence the color of the egg by any process of feeding known to me, but we can the color of the flesh.

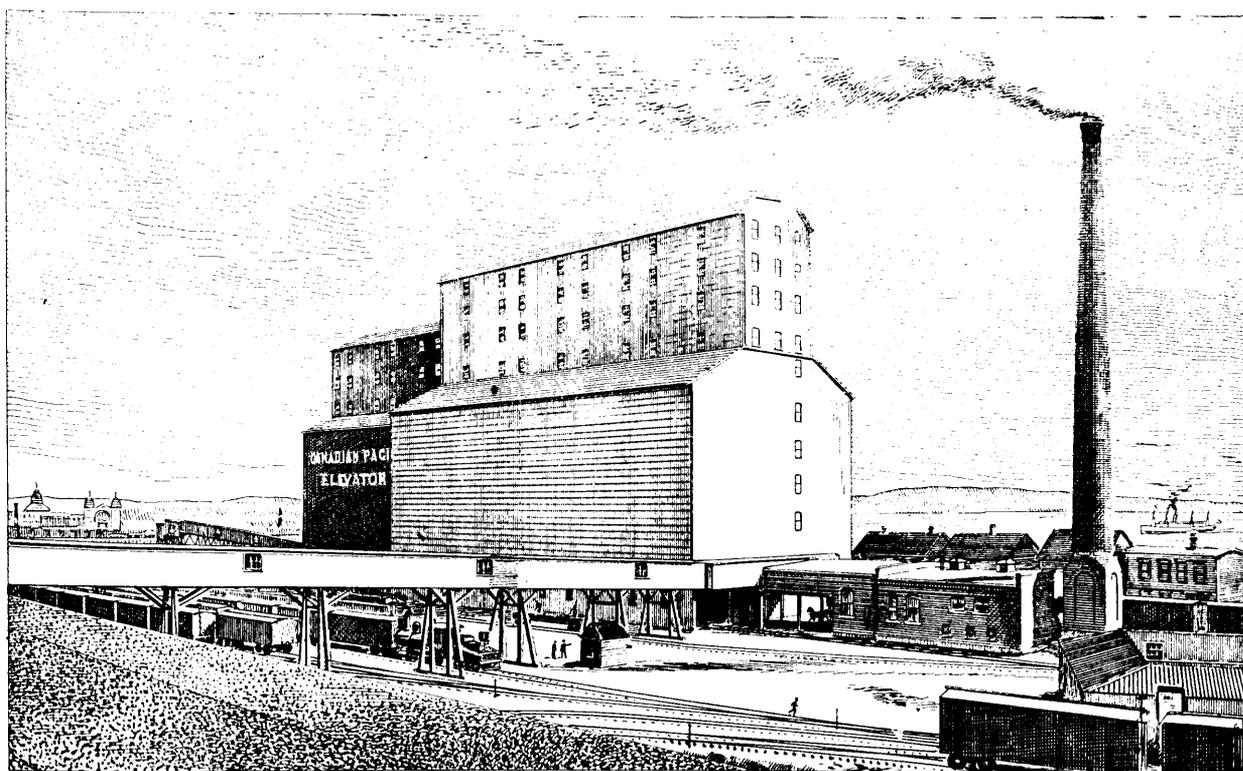
SUITABLE BREEDS

The breeds of chickens which are preferred in England for fattening purposes are the Dorking; the Dorking and Indian game cross and grade Plymouth Rocks and Wyandottes. The Dorking is noted for its fine quality of meat, of which a large portion is found upon the breast. This

inches apart so as to allow the chickens to put their heads through for food, which is given in a small V shaped trough placed in front of the coop. The slats used in the bottom are placed about three-quarters of an inch apart, which allows the droppings to fall below on sand or other absorbent, which is placed there for the purpose. The coop should have a small sliding door in front, so as to admit of removing the fowls when required. The coops are generally placed on stands about three feet from the ground. They should be protected from the sun and rain, but not necessarily put in a building.

FEEDING.

The most satisfactory food is finely ground oats, the hulls being thoroughly pulverized. Mix with skim milk, sweet or sour, and feed in the V shaped troughs. They should be mixed thin enough so that when a spoonful is placed on a plate it will spread over the plate, or when it drips from the end of a small wooden paddle. Avoid feeding it thick. The chickens are fed rather sparingly at first,



C.P.R. Freight Terminus and Docks, St. John West, N.B.

breed is not apparently hardy enough for our conditions, but the Plymouth Rock and Wyandotte do well with us, and have the advantage of producing a brown egg. What is wanted is a good sized bird, with plenty of breast meat of a good quality. The Rocks and Wyandottes are well established, and we can, by careful selection, breeding from the best specimens only, please the buyer of dressed poultry and eggs.

Fowls which are intended for fattening purposes should weigh from 3 to 3½ lbs. each. Pullets are claimed to do as well as cockerels, but I prefer feeding the cockerels, as there is more room for growth. It will usually pay to feed them for about five or six weeks well. When fed for a longer period the gain is not often sufficient to pay for the food consumed and labor expended.

Twelve chickens are placed in a coop 6½ feet long by 16 inches square, inside measurement. Each coop is divided into three compartments, each compartment holding four or five chickens, according to their size. The coops are made of slats. Those used on the back, top and bottom run lengthwise the coop, while those used on the front run up and down. The slats are one inch wide and five-eighths of an inch thick. Those in front should be at least two

and if any food is not eaten within twenty minutes after it has been fed it should be removed. This applies during the whole fattening period. After the first few days feed all they will eat three times a day. Feed the above food until about ten days before killing time, when it will be necessary, in order to get the chickens fat enough, to resort to the use of the cramming machine. While using the machine add about one pound of tallow to the food of every 70 or 80 birds, gradually increasing it to one pound for every 50 or 60 birds. The tallow is melted and mixed while warm with the ground grain, after which the skim milk is added. The tallow increases the juices of the flesh, as well as its general appearance. Do not fail to give the chickens a drink of water, and give them some grit. Clean the coops and keep the fowls healthy. A pinch of sulphur placed under the wings and at the base of the tail is said to destroy all lice and add to the general appearance when plucked.

KILLING AND PACKING.

Before killing it is necessary to starve the chickens 36 hours in order to insure the crop and bowels being empty. This is positively necessary, in order to secure the landing of the goods in first-class condition. Food in the crop or bowels hastens decomposition. The killing is

accomplished by what is known as wringing the necks, which consists of taking the chicken in the hands, stretching the neck, holding the crown of the head in the palm of the hand and giving it a quick turn backwards. They are not bled in any way. Plucking should be commenced at once, as any delay will hinder the ease with which the feathers can be removed. About two inches of feathers are left on the neck. These cover whatever discoloration may be caused by the blood draining into the neck.

After being plucked they are placed on the shaping board, which consists of a board about six inches wide, fastened to a wall at an angle of about 65 degrees. As soon as plucked the chicken is placed on this board or trough, the legs being placed alongside the breast and the stem pushed against the wall. The breast is kept downwards and pressed into the shape of the trough by placing a glazed brick on the top. Being left in this shape it gives the bird a more compact appearance and allows the blood to drain into the neck. The chickens are placed side by side in the trough and allowed to remain there until thoroughly cool, when they are packed in crates for storage or shipment.

The crates usually hold 12 fowl each. They are 33 inches long by 19 inches wide, and 6½ inches deep. The ends and centre piece are one inch thick; the remainder of the box is five-eighths of an inch thick. Fowls should be graded as to size, in order to sell to the best advantage. Before packing the birds are wrapped in clean brown paper, the head and neck projecting at one end, the feet at the other end. They are then ready to forward by express or refrigerator cars to the seaboard, thence to England in cold storage.

Packing Apples for Export

By Jno. B. Pettit, Fruitland, Ont.

The time has come when no one entertains the slightest doubt that the fruit industry is one of the most important industries in our province. During the last few years the industry has developed so rapidly in some sections that the income derived therefrom far exceeds that from any other part of the farm. It has been ascertained that in certain sections of Ontario, and also in the other provinces of the Dominion, we have suitable soil and climatic conditions favorable to the production of all kinds of fruits of the very finest quality. Acting upon this knowledge extensive plantings have been made, so extensive that now when the consequent results are being attained the home demands are more than supplied, the Canadian markets have become glutted and new markets must be hunted up where this enormous annual crop may be disposed of.

Three thousand miles from this land of fertility and over-abundance of good things, but small population, is a nation of millions whose hungry mouths long for our delicious products. Any amount of money have they and they are willing to exchange it for our offerings, but the manner in which our perishable products are to be presented to them in an acceptable condition, so as to demand paying remuneration, is a problem that is puzzling the brains of many.

Of all the fruits that we are able to bring to perfect

maturity in this country the apple is the most in demand and the one the Englishman covets, and although the returns of shipments to the "Old Country" in the past have sometimes been far from satisfactory we believe that the prime causes that lead to this dissatisfaction can be, and we trust, will be speedily done away with.

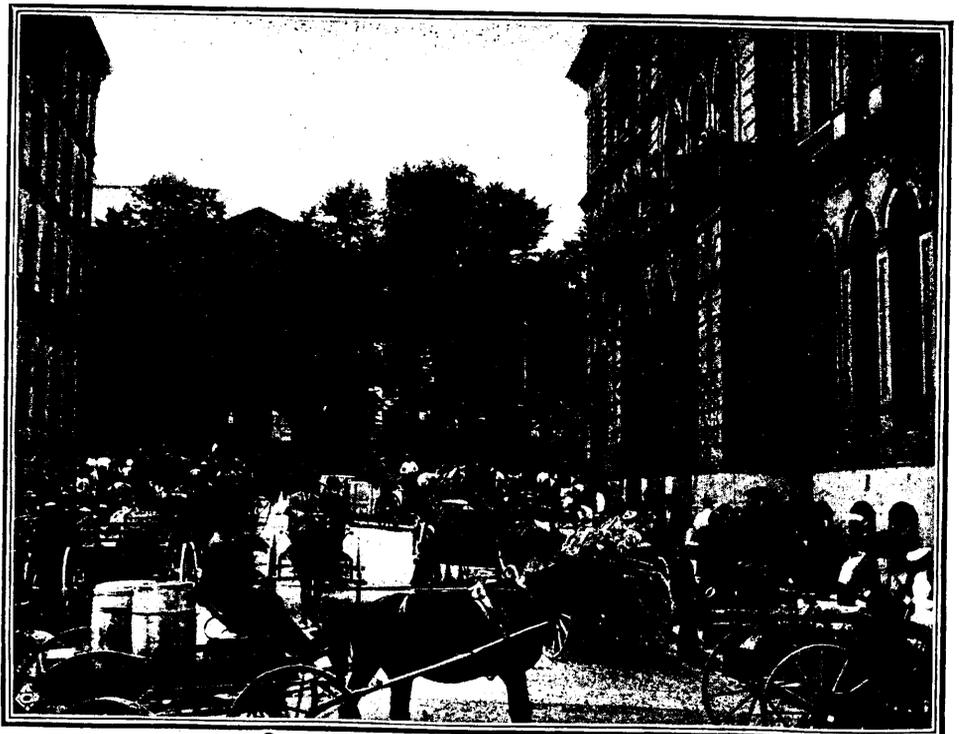
TOO MUCH CARELESS PACKING.

It is a well known fact that one of the main causes of disappointment is the extremely careless manner in which much of the fruit is put up for export, and until the growers of this country make up their minds to exercise more judgment and care in packing we cannot hope to receive remunerative returns for our products. The subject of "Packing" is a large one and one on which, if it were thoroughly handled, a great deal could be written. But in this brief article only a few points can be noticed and discussed.

In the first place we must be careful what varieties of apples we select for export. One thing is quite evident and that is that some varieties will not carry well, and consequently no attempt should be made to send them. All varieties that are soft or given to spot must be kept at home and such varieties as Colverts, Fall Pippins, Rambos, etc. The solid varieties, such as Spy, King, Ontario, Cranberry Pippin, Ben Davis, Twenty Ounce, Blenheim, Wealthy and Damense (snow) are varieties that stand the long journey and are kindly received. Some shipments of Duchess, Gravenstein and Alexander have also brought excellent returns. If the best of these good varieties are so put on the English market as to demand sale there is no doubt but the softer varieties and the small grades of good keepers will find ready market in America.

PROPER GRADING OF FRUIT.

The next important step in the development of the great fruit industry is the proper grading while packing. Much of the disappointment in the past has been caused by the careless grading. The findings in connection with the salvaged cargo of the ill-fated steamer *Castilian* give sufficient evidence that such is a fact and show how unscrupulous some Canadian shippers have been. Is it any wonder that there have at times been unsatisfactory returns? In the past, "Canadian" stamped upon many of our products sent to Europe was an important aid in the sale of



The Green Market at Halifax, N.S.

the same, but no longer is it of much use on fruit packages as such deception has of late been practised. It is astonishing the mixtures that have been forwarded as first class—"No. 1, xxx" apples. All kinds, wormy, scabbed, knotty, large and small in the same case or barrel and in many instances the cases have been "headed" or "faced" with apples of the very largest size, and the remainder has been made up of the above mentioned conglomeration. Such a mode of procedure is only damaging to the trade and should be prohibited by law. To insure success high grading must be resorted to. The man buying from the commissioner pays according to the poorest sample in the package and not the largest and best. The smallest specimens, no matter how clean, should be kept at home and in the larger specimens there should be two or three distinct grades and the strictest honesty exercised.

THE BEST PACKAGE.

What kind of packages should be used? For fancy trade, that is those apples of the largest size and will sell to the most wealthy only, it has been ascertained that it is most profitable to export them in boxes, wrapped separately, or else in boxes containing separate compartments just as eggs are shipped. The idea is to do away with all danger of bruising. Of course these boxes may be made any suitable, handy size, and having different sized compartments to agree with the different grades. In such trade special arrangements could be made with commissioners to handle this high grade stock, or it could be sold direct to the dealers at a certain price per package. In shipping to the general trade it has been found that the regulation barrel brings the best returns if honestly and carefully packed. It has always been found that first class fruit packed in a first class manner will bring ready and profitable sale.

The packages themselves of whatever style or shape must be carefully considered. In the first place they must be strong—*very strong*. It has been said that there is no place where there is as much thieving done as there is at the docks at London. The packages must not give the least appearance of weakness at any point or they will be in danger of being broken open and part or all the contents pilfered. Then the knocking about to which these packages are exposed from the time they leave the hands of the packers until they reach the consumer demands that they be of extra strong construction. If boxes are used they should be bound with wire or sheeting and if barrels are sent they should be extra strong. In many instances the general apple barrel has been found too weak. Heads and staves are too thin and hoops are too few. There should be four middle hoops instead of two. Then the packages should be clean and neatly constructed. It should also be remembered that in England a barrel of apples is sold by weight and that the small barrels turned out at some Canadian factories do not give any gain in the end. In fact they are a loss as it requires more of them for the crop.

CARE ON BOARD THE VESSELS

The fruit industry has reached such a magnitude, and there are so many large shippers carrying on the export business that these men should be continually impressing upon the minds of the members of the steamship companies the necessity of keeping all shipments of apples away from the engine and boiler departments of the vessels. There would be little need of cold storage with apples if this point were more closely looked after. It would certainly be to the advantage of the steamship companies to try and meet these demands of the shippers, and by being waited upon they must in time see the need of the same. If they will not grant this themselves our Government should compel them to do so.

Fruit should be picked before too ripe and after two or three days packed and forwarded.

There is no doubt but that there is an unlimited market in Europe for Canadian apples if the trade is carried on honestly and the market is once established. To secure this trade we must forward fruit of excellent quality, pro-

perly and honestly packed in neat, strong packages. The grading must be high and strict, and there is no question about good sales, for the demand is so great that "*glut*" is never thought of.

The British Market for Canadian Honey.

By R. F. Holterman, Brantford, Ont

No Canadian interested in the development of his country and the British Empire can fail to see with interest and pleasure the increasing attention Great Britain is paying to Canada generally. Canada is a good field for the investment of capital; Canada is a land where Britain's overcrowded population can find comfortable, contented and happy homes, in which, as the world measures it, moral tendencies are good, and the climate healthy and generally enjoyable. But the Canadian farmer, while participating to a greater or less extent in all the above, has in recent years been able to look with particular pleasure upon the increased demand in Great Britain for Canadian farm produce and goods produced in Canada. I should like to see everything done right and honorably towards cultivating that market, and the more Great Britain can get her source of food supply in her own colonies the more will her people wish to go to those colonies and help to build them up; whereas to draw her food supply from foreign countries will not only help to build up foreign countries with which she may at some time or another have to measure strength; but to make these foreign countries her source of food supply may, in time of war, especially prolonged war, weaken her resources.

In this article I shall confine myself to honey, an article of food that stands at the head of all other sweets in digestibility and in the production of which nothing is taken from the fertility of the land, no other crops displaced, and in the gathering of which all kinds of fruit crops as well as buckwheat and such like are materially increased.

CANADIAN HONEY SUPERIOR TO ANY OTHER.

Canadian honey, as far as I know, has always distinguished itself when coming into competition and compared with the honey of other countries. At the Philadelphia Centennial Exposition, I understand, it captured the first award. At the Colonial and Indian Exposition held in London, England, some twelve or fourteen years ago, the exhibit of Canadian, or rather Ontario, honey, eclipsed anything that had ever been shown in this class before.

Coming down to more recent achievements Canadian, or more properly Ontario, honey, has distinguished itself to a still greater extent. At Chicago everyone whose goods reached a certain standard received an award, and although Ontario showed the extracted honey of only one season one exhibit from Ontario received in the aparian department seventeen awards, while all other countries, exclusive of Canada and the United States combined, received fourteen awards, and our one exhibit received more than half as many as the whole of the United States put together.

So much for the quality of our honey. I have tested the honey of many countries and in my estimation I have tasted no honey superior to Canadian honey, and when we take the average quality of the honey of a country I do not know of any equal to that of Canada.

The quality of our honey has thus been fairly well established, and in working up an export trade these facts set forth especially by the official side and in an official way would, it appears to me, have a telling effect on the demand for the article.

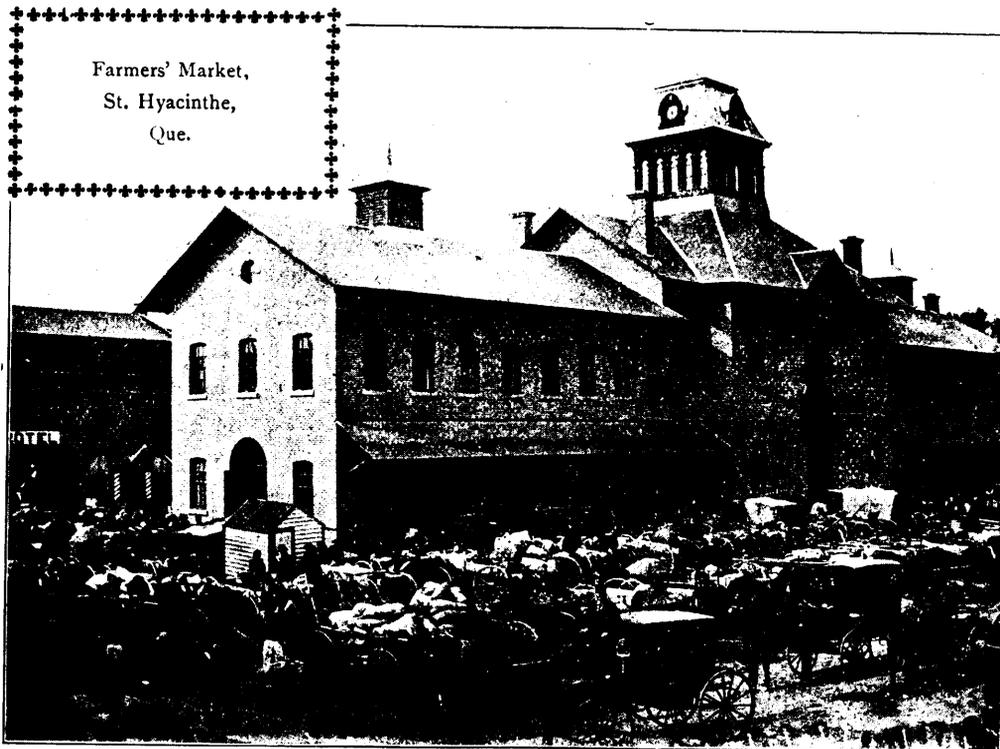
POSSIBILITIES OF THE MARKET.

We might now first turn to the possibilities and openings for a market. We know that the demand for honey may be much increased or decreased by the quality sent for-

ward; a good article will act in the opposite direction from a poor one. When Great Britain or any other country has been importing an inferior article for consumption, and we can replace it by a better, as I believe we can, then we may hope, especially in a thickly-populated country, to increase the import. I have before me a reliable article from the *Australian Agriculturist*, quoted, I believe, from an English paper, and this article states that the average importation of honey into Great Britain for the past five years has been two and a quarter million pounds per annum and the average price $3\frac{1}{4}$ d. per pound, or $6\frac{1}{2}$ c. per pound, which is no small sum.

THE BRITISH MARKET.

There appears to be an excellent field for honey in the British and other foreign markets, and this being the case we might well ask ourselves what has been done to develop them. I am, of course, not conversant with all that may have been done in Canada along this line, but the Government statistics give the export of honey for the year ending June the 30th, 1898, at 5,213 pounds, valued at \$507, and of this the British Empire took 2,093 pounds, valued at



Farmers' Market,
St. Hyacinthe,
Que.

\$193, Great Britain taking 2,000 pounds, Newfoundland 93 pounds, while the United States took 3,121 pounds of this quantity. Ontario exported 3,003 pounds, Quebec 2,182 pounds, Nova Scotia 8 pounds, and Prince Edward Island 21 pounds. There have been small individual shipments from time to time with greater or less success, and has as far as I understood the price realized was equal to if not better than seven cents per pound.

I have not the date, as a fire destroyed the records of the Company, but quite a few years ago The Goold, Shapley & Muir Co., or rather the then E. L. Goold & Co., of Brantford, sent a shipment of honey to England in sixty pound cans, without any regard to source, aside from the fact that it was light, or as we call it, white honey of good quality. It was Linden, Thistle and Clover, and this shipment turned out unsatisfactory, the price realized being considerably less than the wholesale price here. About three years ago, several bee-keepers joined in a shipment to England; in all some 10,000 pounds were sent, the Company sending about 6,000 pounds, and the balance was made up by several bee-keepers, but I have no record of who they were, and I may not remember all of them, but so far as my memory serves me, shipments were sent by George Harris & Son, Dungannon, and F. J. Oakwood. Each man's

honey was lettered, the different qualities were lettered, and a record kept by the Company of the quality and corresponding letter. Clover was sent, some Linden was sent, but very little, and the entire shipment forwarded to a firm recommended by reliable authorities, and this shipment was also highly unsatisfactory. We invoiced it by letter, but a long while after we found that the cans had been stripped of all their wooden boxes and crates, and the quality was mixed up and the different senders' lots of honey had not been kept separate.

TRIAL SHIPMENTS.

This shipment was reported to be of a minty flavor and unsaleable. Prof. Robertson, Dominion Commissioner of Agriculture, when visiting England two years ago, had this honey inspected, and he reported that it did not have a minty flavor. This honey after lying there about two years was sold at a very heavy loss, to get rid of it, and having charge of the bee department for the Company, I advised another trial from many reports I had had. I knew that honey no better than ours sold at much better prices, but I thought that the honey had not been properly

introduced, and that this matter was of such great importance to Canadian bee-keepers, that it should be tried again and in a different way, and they consented. Long and urgent correspondence with Hon. Sydney Fisher, Dominion Minister of Agriculture, and with Professor Robertson, resulted in their consenting, if the Company supplied the shipment and ran their own risk.

Owing to the greater price of Canadian glass and the increased freight rates we did not think it would pay to send honey from here in small packages. But to see at what price this honey would sell wholesale when put in original packages we sent the largest part in glass; four dozen one-pound bottles in a box marked

Canadian honey with the Goold, Shapley & Muir Co., Limited, Brantford, Canada, plainly printed on the label, and in one corner a Queen Bee and Preferential Trade Brand. This was to catch the eye of the British public, and this shipment was sent over to England, the gentlemen before mentioned agreeing to interest themselves in the matter.

The Company asked them to use a portion of the shipment whenever they thought it could be used and to attract people to Canadian honey and develop the market. This was done to quite an extent and with marked success. High officials and influential papers freely commended the honey, and not alone was this of value to Canadian honey, but it was of value to Canadian agriculture, and therefore to Canada as a whole. Every agricultural product that Canada can and does put upon foreign markets, and add to her list of products, so long as it reaches a high standard, the better the impression of the country. The shipment was Clover honey, and from various sources, and was the only light honey wanted, and I came to the conclusion that consumers and dealers called the Linden flavor minty, and this I know, because by sending two samples, Linden and Clover, the Linden was rejected. The honey in bottles sold at a price to net some-

thing like 12 cents per pound, and the sixty-pound cans sold to net about 7 cents per pound.

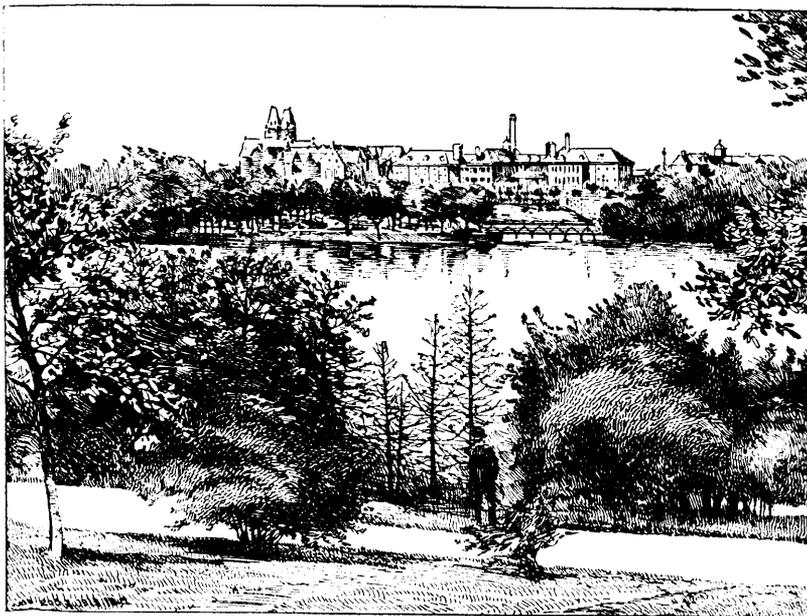
This was of course encouraging, and the Company decided to send over more honey. In fact several carloads were sent with a gradually diminishing price and slower sales. What the reason was I do not know.

A young man in the Company's office at Brantford went to England especially to pack the honey, sell and introduce it there. He reports that a large business can be done in Canadian honey, but that it wants careful and energetic work to do it.

The Company also tried comb honey, and comb well attached to the wood, with a goodly proportion of cells filled next the wood, has gone with entire safety, as anything else we know by sad experience, is likely to break in transit and be a disappointment to the shipper and purchaser. This matter is well worth taking hold of.

I had hoped to see in the large cities of England at least places or depots where Canadian produce of first quality and nothing else would be sold, either by private or public enterprise, but there may be objections seen by those who have looked at the field more closely. In this the motto should be, the greatest good to the greatest number.

by no means benefit of whatever produce he may have in the conveyance with him.



Site of the Pan-American Exposition, to be held at Buffalo in 1901: View across North Bay of Park Lake, from near the Country Club.

EXPENSE OF GETTING PRODUCE TO MARKET.

One of the most serious drawbacks with which the farmer has to contend, is the difficulty and expense of transferring his produce to the market. The conditions of the roads is such as to leave him largely dependent upon the state of the weather. For bad roads and bad weather form a combination which now goes hand in hand, which seriously interferes with the prosperity of agriculture. The greater part of marketing, too, is done during the time of year when the weather is most likely to be unfavorable.

With roads, however, which are properly built; which rain will not soften and convert into quagmires; which frost will not upheave and leave in a spongy state; but which at all times present a hard surface; with such roads a journey can be quickly made at any season of the year, and stormy weather becomes a matter of minor importance, leaving the farmer free to transact business, and market his produce under circumstances most favorable to himself.

What are these circumstances most favorable to the farmer? One is that he shall have a thorough acquaintance with the markets either through the medium of the newspaper, through personal visit to the buyer, or other medium of information. This implies that a journey over the road to the postoffice or to the town may be quickly and readily performed, it implies that the roads must be good.

A circumstance which the farmer must not overlook is that, having a close insight into the state of the market, he may be able to transfer his produce at the time he considers most suitable, irrespective of roads and weather. This is particularly true of wheat, changes in the price of which are at times rapid and of considerable amount. What is true of wheat is true of other staple articles of farm produce which are frequently kept locked in the barn while prices rise and fall, bad roads preventing them being moved.

GOOD ROADS AND GOOD QUALITY.

Another matter in which the farmer can make the marketing of his produce more favorable to himself is to carefully guard the quality. Fruit, vegetables, butter and dairy products are by no means improved by being jolted over a rough road on a hot day. A good road makes the time required for the journey shorter, and the greater smoothness of a good road causes less bruising and crushing. A dusty road cannot be fully guarded against, for dust will

The Transportation of Farm Produce

By A. W. Campbell, C.E., Provincial Road Commissioner.

The advantage of living in a city consists largely in the fact that sidewalks are good, pavements are good, street cars are convenient, household requisites may be ordered by telephone and quickly delivered at the door; the means of getting from one place to another and of obtaining all needed articles are of the best.

Compared with farm life, the contrast is striking, and it becomes apparent that one of the greatest disadvantages of farm life is that there are no sidewalks, roads are bad, and that all means of going from one place to another, of transferring goods are difficult and laborious. It cannot be said to be wholly due to the fact that distances are greater in the country than in the city. To go five or six miles on a stormy day in the city is by no means uncommon, and is quickly and easily travelled by street cars; whereas the same distance in the country is often a journey of considerable proportions in view of the difficulties presented by bad roads and the less convenient means of travel.

The lesson is an obvious one. The isolation of the country is not a matter of miles, but a question of the most convenient means of travelling. While the farmer cannot hope to place himself wholly on a par with his city cousin in this respect, he can certainly do very much more than has been done in the past to improve his facilities for transportation. The farmer, except in a few favored localities, cannot have the electric street cars stop at his door, but he can remove much of the inconvenience which impedes him in all his business and social relations, which in many localities renders country life one of complete isolation for certain parts of the year.

Not only are the roads in a very bad condition during the wet season, but so much are they cut up at these periods that for a great part of the summer they are rough and disagreeable. When the roughness disappears, it means merely that the ruts and ridges are smoothed down into beds of dust, which rises up in clouds on the slightest provocation, to the intense discomfort of the traveller, and

find its way through the smallest opening. All this injures not merely the real quality, but also the appearance of his produce. The price obtainable is thereby lessened and the difficulty of sale increased.

By means of good transportation over country roads there is much land which, now valuable for general farming only, could be utilized for market-gardening, the raising of small fruits and other perishable produce. It does not necessarily follow that the farm must be within easy reach of a town or city over a country road, but if fruits and vegetables can be transferred from the farm to a railway station without injury, an energetic farmer can generally establish a suitable business connection in some city or large town reached by the railway. In this, however, we have the example of France and other European countries, where teamsters compete with railways in drawing goods two and three hundred miles over country roads. Under such conditions, even, the railway is not a necessity to the market-gardener for distances which, to mention them to the Canadian farmer, who knows only Canadian roads and the conditions under which they can be used, is a matter almost beyond belief.

To a number of Canadian fruits, apples, grapes, pears, peaches, which are most prolific in Ontario, a market is opening in England. In order to avail ourselves of this market there is every necessity that the quality of the fruit should be maintained at the highest standard. To this end, the first link in the chain of transportation, the carriage over the country road must be rapid and free from jolting, there must be no more exposure to the heat of the sun, to dust, and no more bruising than can be avoided, otherwise the care in the remainder of the journey in providing rapid railway and ocean transportation and cold storage is thrown away.

COST OF DAIRY PRODUCE LESSENERED.

The transportation of dairy produce is another department in which the farmer can materially benefit from good roads. That milk is injured for all purposes by being jolted and churned over a rough road in the hot sun is well known to practical dairymen. Good roads would mean that milk could be sent to the town, city or railway station for retail trade to very much greater advantage to both seller and consumer. Good roads would also extend the possibilities of such trade over a much wider area of country. Besides improving the quality of butter and cheese produced by the factories, these factories could draw their supply from a much wider area of country, the number of factories would be lessened, and the cost of production per pound thereby decreased. The cost of haulage is a considerable item in the expense attached to many factories, which could be rendered much less by better roads.

Good roads would decrease the cost of haulage of farm produce by lessening the number of horses required, increasing the size of the loads, decreasing the wear and tear in horses, harness, and wagons, in addition to demanding less of the farmer's time. As has been pointed out, they would facilitate the business of selling farm produce to advantage, extend the markets, and improve the quality of the produce as supplied at these markets. In dairying the cost of making butter and cheese would be lessened, and the quality improved.

All these are matters which, looked at separately, may seem trifling, but in the aggregate they amount to a sum of no small dimensions. It is estimated that the cost of wagon carriage on this continent averages 25 cents per ton-mile as compared with 8 cents in those European countries where good roads predominate. The contrast is more striking when it is known that the cost of carrying one ton for five miles over Canadian roads will

carry a ton 250 miles by rail and 1,000 miles by ocean vessel. To be consistent, the farmer who complains against excessive freight rates should not neglect the portion of the transportation system entirely within his own control, the common highway.

One Hundred Years Hence The Farmer of the Twentieth Century; Told in a Dream.

By T. C. Wallace, Toronto, Ont.

In Bellamy's "Looking Backward" and "Equality" I found such interesting reading that studying them in the "wee sma' hours" I one night fell asleep in my comfortable arm chair and dreamed.

I dreamt I was living in the end of the 20th century. To be more explicit, in the year 1999, or one hundred years hence. I found myself in a magnificent farming district in Western Ontario. I did not recognize the faces of the people I met, but I knew they were farmers, though so different in attire and appearance from the same class of to-day. Neatly dressed, well groomed men, whose beards were neatly trimmed, or faces cleanly shaven, appeared at work in field and barn. Comfortable, well-dressed matrons, and bright stylish girls moved about the houses at their ordinary duties. Such a bright, smart-looking lot of children as I saw at the country school-house I had never seen before. And the homes of these people could only be compared, and that favorably, with the country villas of the wealthy city merchants of the nineteenth century. The roads were finer than anything day-dreamed of by our most enthusiastic good-roads advocates. By the side of all the main roads light, noiseless trains carried passengers, and occasionally cars loaded with freight or produce moved along the highway. Fences were only seen surrounding animals at pasture, and even these seemed to be of a temporary nature.

Approaching one of the most important of the houses I found myself an object of seeming curiosity to the inmates, but the kindly, well-bred manner of the lady, who was the farmer's wife, soon put me at my ease, and evident ignorance of the country and customs in which I found



Pan-American Exposition Site: View East on Park Lake from the Elmwood Ave. Bridge

myself easily convinced them I was a stranger. I was invited to supper, and without wearying the reader with details, I will state briefly that the farmer was a very intelligent, well educated gentleman. Glancing at a calen-

dar I noticed the date, July 10th, 1999. When informed that the date was correct, and being unable to explain to myself how I had lost or gained 100 years, I gave up the conundrum. After supper the farmer questioned me much about the 19th century methods and then described the age in which he lived.

"A HUNDRED YEARS AGO,"

said he, "thoughtful men were warning farmers that unless they adopted rational methods of restoring the soil to a condition of fertility approaching that in which they found it when they broke up the prairies and forests for agricultu-



A Fur Market in the Far North.

tural purposes, that nature would destroy them in self-defence. It was pointed out that the land which was originally rock ground up by natural forces through many centuries, had been gradually, through subsequent centuries, organized by natural forces until a considerable depth of it became in a condition of fit food for various species of plants. The original or first plants to grow were of a comparatively low order and were mostly of the family described by scientific men as beginners, which were atmospheric nitrogen gatherers. As they died in successive seasons their bodies decomposing in the earth left a condition of organized food for higher types of plant life.

MAN COMING ON THE EARTH

found it a garden abounding in many kinds of plants which reproduced themselves in a natural way. On better acquaintance he found them useful as food, or fashioned them into implements of trade and material to shelter and keep him warm. Gradually he noted that by selecting the seed of the best of the most useful ones, and planting them in the rich soil by themselves, keeping them free from the encroachments of other plants (termed weeds), they improved year by year, until they gave not only more useful produce but were even quite changed in character from the original wildlings. And so the cultivator's art went on, moulding these wildlings during successive centuries, until we can no longer recognize them in the plants we till.

AS MAN MULTIPLIED

on the earth, and also took means to herd together and domesticate types of animals which he found useful for his purposes, he pre-empted portions of the globe's surface which he found yielded most easily to his labors, and dividing them into farms, subtracted the organized plant food from them. He depleted the soil of what was called its fertility, only returning to it such portion as he found most convenient, casting the balance into the sea or destroying it by fire. The time came, as described, one hundred years ago, when

THOUGHTFUL MEN BECAME ALARMED

for the future sustenance of the race. Man had at that time taken up nearly all the sections of the earth where vegetation could thrive sufficiently for his wants, and the people were multiplying so rapidly that the natural sequence of affairs suggested a depletion of population by starvation. No man knew how many times during the thousands of past centuries the races of men had been practically destroyed by natural forces to allow nature to recoup herself.

Our earliest record of such an event was of

A DELUGE.

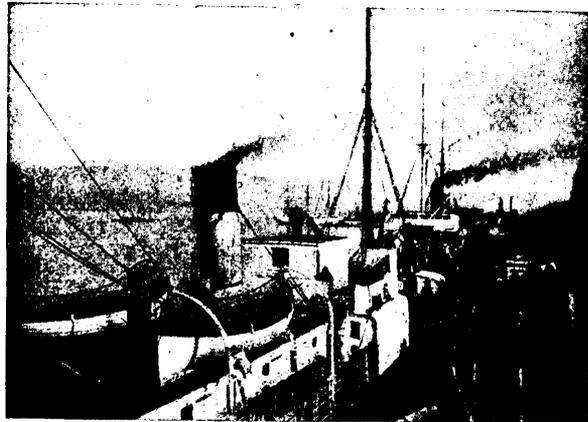
And even that, told in ancient language, gave but a vague idea of race destruction. Many famines had occurred in the older settled lands, but as methods of locomotion and carrying were devised they were relieved from newer lands. It was evident, however, that some great effort must be made to restore the soil, from which we were extracting vitality, to something approaching the pristine fertility, or disaster would follow. Already the diseases of man and beast were occupying the attention of a vast army of doctors who labored with tireless energy to discover and apply palliatives, and devise methods of sanitation. The struggle between man and nature was getting severer year by year.

FIFTY YEARS PREVIOUS

Liebig had written his chemistry of the farm and directed attention to the necessity of returning to the soil at least the most essential elements of plants in forms of easy absorption. Gradually schools of agricultural science were established in all civilized countries, and soil and plants were studied. People were beginning to talk of scientific and modernized farming, but up to that time the work of scientific agriculturists seemed largely to be narrowed in the lines of, producing the best from what already existed, selection of seed and stock, methods of manipulation in practical farming, the feeding and breeding of domestic animals, the destruction of injurious insects and the stamping out of the continuously recurring diseases.

ABOUT THIS TIME,

too, a noted scientist, president of the British American Society, but not specially a student of agriculture, in his inaugural address at Bristol, England, pointed out the impending danger of widespread famine, and consequent typhoid, which he thought threatened the world within half a century. Agricultural scientists disagreed with this eminent man in fact, but generally admitted the correctness of the principle involved. Governments were appealed to, and strenuous efforts were made to awaken the farmer to a realization of the state of affairs. Unfortunately the farming communities had never given any special attention to edu-



A Steamer at Vancouver, B.C., loading for the Klondike.

cation, except in merely teaching the children the ordinary branches which fitted them for the circle of society in which they moved.

THE ATTEMPTS TO TEACH FARMERS

better cultivation, then, took the form of experimental exhibits, and was practically a system of empirics or quackery. The professors employed to teach considered this the only possible plan, in view of the farmer's want of education, to fit his mind to receive and understand the teaching of scientific principles. Here and there a practical man with a gift or aptitude for making the principles very plain in such language as farmers could grasp readily labored among them, and awakened much earnest thought. Gradually it dawned upon the educational authorities that the

AGRICULTURAL EDUCATION OF THE FUTURE

generation was more important than the enlightenment of the farmer of the day, whose energies were already sufficiently taxed in providing a living for himself and his family. The

United States educating the Cuban and Filipino children for free citizenship of civilization, while they held their parents in check by the force of arms, pointedly exemplified the impracticability of educating the adult masses, and the influence of education upon the children proved the true remedy. Excellent work had indeed resulted from the establishment of agricultural colleges and experimentation or illustration stations, but the principal point gained was in the mastering of problems involved in the principles of agriculture and the fitting of thousands of practical men for teachers. For teaching the Germans led the world, as they reduced the problems to the exactness required by science. The practical people of the British Isles carried out countless experiments and proved or disproved many theories.

CANADA AT THIS TIME

only had about five or six million people, largely of the Anglo-Saxon race. Her immense area of rich agricultural lands and hardy climate promised a grand field for the agriculturist. Her people were largely intelligent and her common free school system made them a fairly well educated class, with comparatively few illiterate. But children in the rural districts had not been taught the simplest principles of agriculture, and consequently when grown to manhood they failed to benefit to any appreciable degree by the best efforts of the agricultural teachers.

THE DEPARTMENTS OF EDUCATION

and agriculture of the various provinces of Canada determined to grapple with the problem, as they recognized that the future food supply was in jeopardy. They had already done much in the way of proving the value of Canadian farm products, and their farmers were yet in a fairly prosperous condition. Strange as it may seem to day they met the most strenuous opposition from the farmers, most of whom owed their prosperity to hard labor on comparatively new lands. They had never received education in agricultural or natural principles, and feared that such education would unfit their boys for work. They ascribed the forsaking of the farm for the cities by their boys to the education already obtained in the common schools.

WANING FERTILITY

of their lands was to them but an expression, and they looked to redoubled manual labor as the only true cure. The disastrous results of bad seasons or bad markets were respectively ascribed to providence and the government. They had to put up with one, and they generally took occasion to vent their wrath on the other by changing their representatives.

IT TOOK STRONG, BOLD MEN TO LEAD

the movement to introduce agricultural subjects into the common schools. Ready and forceable speakers were found among the farmers who denounced "book farming" in stirring addresses, and for years the future education of the agriculturist was in doubt. An attempt to make such education obligatory was sure to fail, and so the entering wedge was set in the form of optional teaching.

IN THESE ENLIGHTENED DAYS

when a study of all the underlying principles of agriculture is compulsory in the teaching of the city as well as the country schools, and every farmer is so trained that he is able to work in harmony with the natural forces attending the production of his crops, it is hard for us to appreciate the educational difficulties of the nineteenth century. Up to that time the old-fashioned mould-board plow was accepted as the undoubted standard, and when advanced thinkers questioned the ridiculous custom of continually turning the land up side down and often burying the valuable plant nutriment supplied one year and wondering at not getting any value from it the next, the farmers of that day

RIDICULED THEM AS HUMBUGS.

Yet these same farmers were playing the old game of a grandpa with his spectacles lost on his brow. Think of the now obsolete mowing machine of the nineteenth century, which was but an improvement on the scythe of the ancients, and compare it with the splendid machine of the twentieth century which is adjusted to cut and bind the grains or the timothy and clover hay, and besides saving

the cost of the extra machine it saves ten times the amount of labor. In the latter part of the last century scientists were beginning to look upon clover as a nitrogen gatherer, but now any schoolboy can explain the function of clover and consequently the immense store of valuable atmospheric nitrogen is being utilized to form

THE GREAT CROPS OF THIS AGE.

The function of nitrogen is understood by all farmers, and so the size of their crops is controlled. In those days farmers and orchardists applied potash occasionally to their soil on the advice of some scientific authority, but being themselves entirely without exact knowledge of the nature of potash they were generally disappointed, as they usually expected almost impossible results. Compare that with the intelligent agriculturist of this day adding potash manures to flesh his fruits and tubers, already well supplied with nitrogen and phosphates.

The agricultural writers of the nineteenth century thought nitrogen the great essential manure for wheat growing, but now we know what a fallacy that was. We fully recognize the influence of nitrogen in giving us quantity of crop, but in the cereals we know that the great requirement is a hard, plump, nutritious seed. So we apply an excess of phosphate and so encourage the

REPRODUCTIVE ORGANS OF THE PLANT,

with the result that we obtain one hundred and even more bushels of good hard grain to the acre. Whereas the average crop of that age was about twenty-five bushels, now you will observe by these statistics it is about seventy. [The library contained all the latest agricultural works and statistics.] The orchardist of those days was afraid to apply sufficient nitrogen for fear of excessive wood growth, but now he no longer fears the wood growth, because he applies as well plenty of the mineral manures to balance the food requirements of his crop and to stimulate reproduction. We do not waste our nitrogenous manures on the clover or pea crop, as these plants get all the nitrogen they require when manured with the minerals, and from the refuse roots and tops supply us with nitrogen for the following crops.

EIGHT AND TEN TONS OF CURED CLOVER HAY

per acre is now obtained in two or three cuttings a season, a result considered marvelous in those days. The value of a crop of hay or roots is no longer measured by its bulk alone, but by its nutritive feeding power, and while in the old days turnips carrying ten per cent. of solid feeding value were a grand crop, now we consider it a very poor crop which does not have at least fifteen per cent. of solids. While the pastures of that age were large tracts of poorly-tilled land, to-day you notice small plots feeding two or three horned stock to the acre and still looking rich and fresh. You will see hemp grown now in climates which our great grandfathers considered totally unsuited to the plant, and the secret of it all is the plentiful application of nitrogen to give stature and toughness to the plant.

THE METHODS OF THIS AGE

are the result of education, and while we know by comparison they are vastly superior in results to those of past ages, yet we have still much to learn and many improvements to make. The agriculturist of to-day is the recognized leader in natural science, instead of the disheartened laborer slaving sixteen hours a day and sleeping the balance. The luxuries of the earth surround him in his home, and the women of his household live healthy, comfortable lives, thanks to the labor saving contrivances so easily obtainable. The people you see about you are healthier and better than the race used to be, because better food is produced and sounder principles are applied to its preparation. Yet we are only on the verge of discovery and the millennium is a long way off.

We have talked enough for one evening, but you will sleep now and to-morrow we will study the practical working out of the modernized farming methods of the twentieth century."

But I awoke and found myself in the easy chair in my room in Toronto with the daylight streaming in through the window and my own calendar showing 10th July, 1899, as the date.

The Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep, and Swine Breeders' Associations, and of the Farmers' Institute System of the Province of Ontario.

VOL. II.

No. 47



Photograph of part of first car of pure-bred stock shipped to British Columbia under the auspices of the Dominion Live Stock Associations.

LIST OF STOCK FOR SALE OF MEMBERS OF THE DOMINION CATTLE, SHEEP AND SWINE BREEDERS' ASSOCIATIONS

THE DOMINION CATTLE BREEDERS' ASSOCIATION.

Shorthorns.

Biggins, W. J.	Clinton	2 bulls, 12 and 26 months.
Birdsall, F. & Son	Birdsall	Bull calves and heifers.
Bonnycastle, F. & Son	Campbellford	6 bull calves, 1 to 10 months; 10 heifer calves; 9 cows and heifers.
Bright, J.	Myrtle	8 young bulls.
Brodie, G. A.	Bethesda	12 bull calves, 6 to 15 months; 12 heifers, 6 months to 2 years.
Caldwell Bros	Orchard	Bull, 12 months.
Cooper, J. V.	Pictou	Bull, 3 years; yearling bull; 3 bull calves.
Davis, J. F.	Tempo	6 young bulls; cows and heifers.
Dickison, W.	Mildmay	4 bull calves, 3 to 7 months; 12 females, different ages.
Douglas, J.	Caledonia	14 bulls, 4 to 20 months; young cows and heifers.
Dryden, Hon. J.	Brooklin	5 young bulls.
Dyment, S.	Barrie	2 yearling bulls; bull, 5 years.
Eldridge, J.	Hepworth Station	Bull, 10 months.
Elliott, W. R.	Hespeler	4 bull calves, 10 to 12 months; heifers, 1 and 2 years.
Evans, J. C.	Grimeshorpe	Aged cow; cow, 3 years; 2 heifers, 2 years.
Fairbairn, H. K.	Thedford	8 cows; 5 heifer calves; 2 bulls, 8 months.
Ficht, V.	Oriel	10 cows and heifers; 10 bulls.
Fried, J.	Roseville	Bull, 3 year; 5 bull calves, 11 to 18 months.
Gibson, J. T.	Denfield	2 yearling bulls; females.
Gibson, J.	Delaware	Bull, 20 months; heifer calf.
Gorwill, S. B.	Port Perry	Bull, 4 years; 4 bull calves; heifers.
Graham, W.	Port Perry	20 cows, 3 years; 10 heifers, 2 and 3 years; 3 bulls, 8 to 10 months; 12 yearling heifers and heifer calves.
Grainger, W. & Son	Londesboro'	4 bulls, 4 to 9 months; females all ages.
Harvie, J. R.	Orillia	Bull, 6 months; bull, 20 months; females all ages.
Hauser, I.	Weisenburg	3 bulls, 2 to 14 months; heifers, 1 year.
Hawshaw, H.	Glanworth	Bull, 3½ years; bull, 4 months; 4 heifers, 4 months.
Jeffs, E. & Sons	Bond Head	Yearling bull; 6 bull calves; young cows; heifers and heifer calves.
Milne, D.	Fitch	14 bull calves; 3 to 11 months; cows and heifers.
Pettit, W. G. & Son	Freeman	2 imp. bulls; 14 heifers, 2 years; 15 bulls, 6 to 18 months; 30 heifers; young cows.
Rusnel, D. H.	Stouffville	3 bulls, 8 to 18 months; 2 heifers, 1 year; cows.
Sibbald, F. C.	Sutton West	47 head, including bulls, heifers and cows.
Smith, A. W.	Maple Lodge	14 young bulls; 16 young cows and heifers.
Smith, H.	Hav	12 young bulls; 15 heifers; young cows.
Staples, F.	Ida	Yearling bull.

Ayrshires.

Brooks, R. S.	Brantford	Bulls, 6 to 13 months; heifers.
Caldwell Bros	Orchard	3 yearling bulls; 3 bull calves; 25 cows and heifers.
Campbell, J. R.	Vernon	Bull, 4 years; 4 heifers, 3 years; cows; bull calves.
Clark, W.	Meyersburg	Cow, 26 months; cow, 4 years; 4 heifers, 3 to 15 months.
Davies, R.	Toronto	7 bulls, 6 to 22 months.
Drummond, D.	Myrtle	2 bull calves; cows and heifers.
Guy, F. T.	Darlington	Bull, 10 months; heifers; calves, both sexes.
Hill, G.	Delaware	3 bulls, 4 months to 2 years.
Hume, A. & Co	Menie	2 bulls, 1 and 2 years; 6 bull calves, 4 to 10 months; young cows; heifers, 1 and 2 years; young heifer calves.
McGillivray, Maj. J. A.	Toronto	6 cows and heifers; bull calf.
Owens, Hon. W.	Montebello, Que.	Bull calves, yearlings.
Parlee, M. H.	Sussex, N.B.	5 bull calves; heifers.
Reid, R. & Co.	Hintonburg	3 bulls, 4, 6 and 12 months; calves.
Runciman, G. A.	Warkworth	2 bulls, 2 and 3 years.
Sipprell & Carroll	Carholme	Bull, 2 years; bull calf.
Staples, F.	Ida	Bull, 3 years; bull calf, 8 months; heifer calf, 8 months; 2 heifer, 2 years; cow.
Willis, W.	Newmarket	2 bulls; cow, 3 years; heifers.
Yull, J. & Son	Carleton Place	Bulls and heifers, under 1 year.

Jerseys

Birdsall, F. & Son	Birdsall	Bull calf, 8 months; 2 yearling heifers.
Davis, R.	Toronto	2 bulls, 11 months.
Duncan, W. A.	Sault Ste. Marie	Cow, 6 years; bull 2 years; heifer, 3 months.
Dyment, S.	Barrie	2 bulls; bull calf.
Gibson, R.	Delaware	Females, various ages.
McGillivray, J. A.	Toronto	3 cows; 3 heifers; bull, 3 years; bull calf.
O'Brien, J.	London West	4 bulls, 9 months to 3 years.
Willis, W.	Newmarket	Cow, 6 years; 3 young bulls; heifers.
Wood, W. J.	Cornwall	2 heifers, 2 years; 2 yearling bulls; 3 heifer calves; 2 bull calves.

Polled Angus.

Bowman, J.	Guelph	4 bulls; females, different ages.
Hall, W.	Washington	2 cows; heifer calf; 2 bulls, 1 and 2 years.
Robertson, T.	Dunsford	4 bulls; cows and heifers.
Sharp, J.	Rockside	2 bulls, 7 and 8 months.
Varcoe, J.	Carlow	Bull, 4 years; 6 bull calves; 12 females, all ages.

Galloways.

Lloyd-Jones, T.	Burford	2 bull calves.
McCrae, D.	Guelph	4 bulls; 15 bull calves; 30 heifers.
Sibbald, J.	Annan	4 bulls; 14 females.

Herefords.

Smith, H. D.	Compton, Que.	Young bulls.
Stone, A.	Guelph	5 bulls, 14 to 21 months; cows, heifers and calves.

Holsteins.

Hallman, A. C.	New Dundee	3 bulls, 8 to 12 months; heifer, 12 months; heifer calf, 4 weeks.
Honey, R.	Brickley	Yearling heifer; heifer calf.

Devons.

Rudd, W. J.	Eden Mills	Stock, both sexes, all ages.
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First Car of Purebred Stock to British Columbia.

The illustration given herewith is from a photograph taken at Port Perry of part of the first carload of stock shipped to British Columbia by the Live Stock Associations. The bulls were purchased by officers of the Associations for Mr. Edward B. Webster, of Keremeos, B.C., for use on the Western ranges. Mr. Webster considers the venture so successful that he will at an early date make another purchase for British Columbia, which will include Shorthorn, Jersey, and Ayrshire cattle, and Shropshire and Oxford sheep.

The car was consigned from Myrtle to Okanagan Landing, B.C., via the G.T.R., loading being completed at Port Perry. The rate to Okanagan Landing, including \$3 for stop over at Port Perry, was \$135—the reduced rate allowed on registered stock. The car left Port Perry on July 20th, and arrived at Keremeos on August 5th. Stock was bought from the following gentlemen: John Bright, Myrtle; Don White, Ashburn; F. Franklin, Shirley; Chas. Calder, Brooklin; D. Drummond, Myrtle; John Adams, Port Perry; John Leask, Greenbank; Oliver Williams, Port Perry; Albert Williams, Port Perry; James Cook, Myrtle; and Alex. Calder, Epsom. The quality and breeding of the animals contained in this car was very good. Some of the animals were especially valuable, particularly the bull bought from Mr. James Leask, which was a son of the celebrated Moneyfluffe Lad, and his dam an Isabella cow by imported Vansgarth.

The stock arrived in good shape, and Mr. Webster is much pleased with the purchase.

Lichens on Apple Trees.

By M. W. Doherty, B.S.A., M.A., Biological Department, Ontario Agricultural College.

My attention has been called to the fact that apple trees in various parts of the province are being damaged by the growth of lichens on the bark. Through the kindness of Mr. Hodson

THE DOMINION SHEEP BREEDERS' ASSOCIATION.

Gazette—Continued.

Leicesters.

Armstrong, G. B.	Teeswater	Ram, 2 shears; 2 shearing rams; ram lambs.
Bennett, G., & Pardo	Chasing Cross	Aged ram; shearing ram; 12 ram lambs.
Currelly, T. & Son.	Fullarton	75 head, both sexes, all ages.
Douglas, J.	Caledonia	40 ram and ewe lambs; shearing ewes.
Dunnet, A. & Son	Cianbrasil	Aged rams; aged ewes; 2 shearing rams; shearing ewes; ram and ewe lambs.
Gardhouse, J. M.	Highfield	2 rams; 2 shears; 10 shearing rams; ewes and lambs.
Jeffs, E. & Sons	Bond Head	Aged ram; 2 shearing rams; 3 ram lambs; shearing ewes; ewe lambs; breeding ewes.
Johnson, J. W.	Underwood	Ram, 1 year; 2 rams and 2 ewes, 6 months; 6 ewes, years.
Smith, A. W.	Maple Lodge	100 rams and ewes, different ages.
Snell, J.	Clinton	20 ram lambs; 2 shearing rams; ewe lambs.
Wood, C. & E.	Freeman	Yearling rams and ram lambs.

Oxfords.

Arkell, H.	Arkell	100 ram and ewe lambs; yearling rams and ewes; imp. ram lambs.
Cooper, J. V.	Picton	9 shearing rams.
Cousins, J. & Son	H. riston	Ram and ewe lambs.
Dickison, W.	Mildmay	8 ram lambs; 20 ewes, different ages.
Elliott, W. R.	Hespeler	Ram and ewe lambs; aged ewes.
Evans, S.	Gourcock	2 shearing rams; 12 ram lambs; 10 ewe lambs; aged ewes.
Finlayson, K.	Campbellton	Imp. shearing ram; 18 ram lambs; aged and shearing ewes; 17 ewe lambs.
Lemon, S.	Kettleby	Ram, 3 shears; 6 ram lambs.

Shropshires.

Bow Park Co.	Brantford	18 shearing rams, not registered.
Bright, J.	Myrtle	8 lambs.
Dryden, Hon.	Brooklin	6 yearling ewes; 10 aged ewes; 20 ram lambs.
Gibson, R.	Delaware	25 rams; 20 ewes, various ages.
Harding, R. H.	Thorndale	15 lambs.
Lloyd-Jones, T.	Burford	25 ram lambs; 11 shearing rams; rams, 2 shears.
Pettit, W. G. & Son	Freeman	10 yearling rams; 15 ram lambs; 15 ewes, 1 and 2 years.
Wren, C.	Uxbridge	Ram and ewe lambs; ram, 2 shears; shearing and aged ewes.
Yuill, J. & Sons	Carleton Place	Rams, under 1 year.

Cotswolds.

Bonnycastle, F. & Son	Campbellford	11 ram lambs; 20 ewes and ewe lambs.
Ficht, V.	Oriel	75 ewes and ewe lambs; 20 ram lambs.
Graham, W.	Port Perry	15 head, both sexes, 8 months to 3 years.
Honey, R.	Brickley	Ram, 3 years; 4 ram lambs; 2 shearing ewes.
Laird, G. & R.	Guelph	19 shearing ewes; 5 shearing rams; ram lambs; 20 ewe lambs.
Linton, W.	Aurora	Ewes and ewe lambs; 40 rams.
McCrae, D.	Guelph	4 rams; 20 ram lambs; 30 shearing ewes.
Meyer, J. E.	Kossuth	Ram lambs.
Swayze, D. R.	Winger	20 ewes and 6 rams, all ages.
Thompson, W.	White Rose	6 ewes, 1 and 2 years; 6 ewe lambs; 10 ram lambs.

Southdowns.

Baker, G. & Son	Simcoe	Stock, both sexes, all ages.
Higginson, C. F. & Sons	Chilliwick, B.C.	Stock for sale.
Jackson, J.	Abingdon	Rams and ram lambs; ewes and ewe lambs.
Jeffs, E. & Sons	Bond Head	Aged ram; 4 shearing rams; 6 ram lambs; aged and shearing ewes; ewe lambs.
Lemon, S.	Kettleby	2 shearing rams; 2 ram lambs.
McEwen, R.	Byron	Imp. ram; 2 shearing rams; ewes; 10 shearing ewes.
Martin, E. E. & Son	Canning	Aged ewes; ram and ewe lambs.
Martin, W.	Binbrook	4 shearing ewes; 6 lambs; ewes; 3 ram lambs.
Scott, J.	Aberfoyle	10 ram lambs; 4 ewes.

Lincolns.

Gibson, J. T.	Denfield	Rams and ewes.
Gould, G. & Son	Rutherford	Ram, 2 years; shearing ram; 10 ram lambs; 2 shearing ewes; 2 aged ewes.
Parkinson, E.	Eramosa	40 ewes, 1 year and over; ram, 4 shears; 2 shearing rams; 100 ram lambs.
Stevens, R. W.	Lambeth	Ram lambs; shearing ram.

Dorset Horns.

Bowman, J.	Guelph	2 rams; 2 shears; 4 lambs.
Harding, R. H.	Thorndale	40 head, all ages.
Hunter, J.	Wyoming	8 shearing rams; 10 ram lambs; aged ewes and ewe lambs.
McGillivray, J. A.	Toronto	50 ram and ewe lambs; 20 shearing rams; 25 ewes, different ages.
Wilkie, G. H.	Wisbeach	2 ram lambs.

Suffolks.

Rudd, W. J.	Eden Mills	5 ram lambs; females all ages.
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THE DOMINION SWINE BREEDERS' ASSOCIATION.

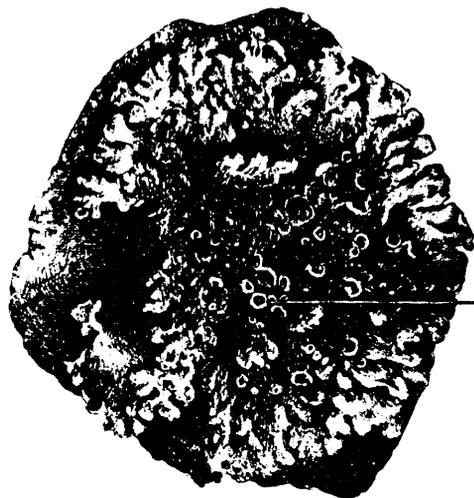
Berkshires.

Bonnycastle, F. & Son	Campbellford	30 head, 6 weeks to 7 months.
Brien, E.	Ridgetown	30 pigs, both sexes, 4 to 5 months; 2 boars, 1 year.
Caldwell Bros.	Orchard	7 boars and sows, 3 months.
Campbell, J.	Snelgrove	Stock, both sexes.
Clark, W.	Meyersburg	2 sows, 2 months; sow and boar, 10 months.
Collyer, F. J.	Welwyn, Assa	3 young sows; 7 young boars.
Colwill Bros.	Newcastle	3 sows, 6 months.
Decker, C. R.	Chesterfield	31 head, both sexes; young stock all ages.
Douglas, H.	Huntingfield	Boar, 3 months; 7 sows, 6 weeks to 2 years.
Dyment, S.	Barrie	Stock, all ages.
Evans, J. C.	Grimesthorpe	Boar, 2 years; 2 aged sows; 29 boars and sows, 1 to 11 months.
Ferguson, J. J.	Smith's Falls	Sow and 3 boars, 12 weeks; boars and sows, 8 weeks; aged sows.
Gibson, D. J.	Bowmanville	Boar, six months; 4 sows and boar, 3 months.
Glendinning, H.	Manilla	Boar, 2 years; 2 boars, 2 months; 20 sows, 2 to 8 months.
Gosney, T.	Miami, Man.	Young boars and sows.
Harris, G. N.	Lynden	2 sows, 16 to 20 months; boar, 7 months; 15 boars, 10 to 14 weeks.
Hastie, A. C.	Comber	Boar, 10 months; 6 sows and pigs, 3 months to 2 years.
Hauser, I.	Weisenburg	40 pigs, 2 to 6 months, both sexes.
Hill, G.	Delaware	Pigs, both sexes, 4 to 10 months.
Hoover, P. R. & Sons	Green River	Boar, 2 years; sow (imp.) 3 years; pigs, 1 month.
Jeffs, E. & Son	Bond Head	Aged boar; 3 young boars; 5 young sows; spring pigs.
Johnson, C. L.	Rosedene	6 boars and 10 sows, 3 to 5 months.
Johnson, J. W.	Underwood	Sow, 9 months.
Julian, G.	Heathcote	27 boars and sows, 2 to 18 months.
Lemon, S.	Kettleby	20 pigs, 6 weeks.
Linton, W.	Aurora	50 head, both sexes, all ages.
McAvoy, C. C.	Atha	40 boars and sows, 2 to 8 months.
McEwen, J.	Kertch	Aged sow; yearling sow; 12 boars and sows, 5 and 10 months.
McCrae, D.	Guelph	Sow; 2 boars, 8 months.
McGill, J. A.	Neepawa, Man.	Aged boar; 8 sows, 4 to 6 months; young pigs.
McKenzie, R.	High Bluff, Man.	Sows, 6 months; young pigs, all ages.
Martin, E. E. & Son	Canning	20 boars and sows, 3 to 10 months.
Parlee, M. H.	Sussex, N. B.	15 young boars and sows, different ages.
Reed, T.	Ardrea	Boar, 24 months; sow, 2 years; sow, 5 months; 9 pigs, weeks.

I am able to give this illustrated description of this peculiar plant.

Everyone is familiar with the greyish green patches which are frequently to be found on old board fences and on the bark of various kinds of trees. They are of irregular outline and present a roughened surface. They make their appearance as minute patches but time and favorable environment are alone necessary in order that they may extend over a considerable area. A permanently humid atmosphere and a slow growth of the tree are the most favorable conditions for the luxuriant growth of lichens. Trees making rapid growth are rapidly exfoliating the dead cork-cells on the outside, therefore the luxuriant development of lichens is impossible.

A lichen is made up of two distinct forms of plant life, each of which, under certain circumstances, is capable of independent existence. As a



Lichen growing on bark of apple tree.

rule the parasite lives entirely at the expense of its host. Such is the case with the fungous forms so injurious to farm and garden crops, viz., wheat-rust, smut, black-knot, etc. In lichens, however, we have the most conspicuous example of mutualism or symbiosis known. Here we find a fungus and a host (algal cells), living a united mutual benefit existence. The fungus provides the water and dissolved salts for the algal, and in return receives assimilated organic nutriment.

Lichens are injurious to the trees upon which they grow chiefly because of the fact that they cover up the openings (lenticels), through which the tree obtains oxygen. As the presence of oxygen in the interior of a tree is absolutely necessary for the maintenance of its vital processes, lichens always tend to bring about an unhealthy condition of the tree, and frequently furnish us with the reason for the death of so many branches.

Remedies.—Induce a vigorous growth of the tree either by pruning back or by enriching the soil, or better by both. Scrape off as well as possible and then apply with an old scrubbing-brush the following mixture: One pound of hard soap, or one quart of soft in two gallons of water; heat to boiling, and add one pint of crude carbolic acid.

Reid, R. & Co.	Hintonburg	Spring pigs, both sexes.
Rudd, W. J.	Eden Mills	4 boars and 10 sows, 5 months.
Russell, F.	Cedarville	12 head, 1 to 6 months.
Russell, J. A.	Precious Corners	20 boars and sows, all ages.
Sieffert, J. H.	North Bruce	Aged boar; 3 sows, 3 and 4 months.
Siprell & Carroll	Carbo.me	9 boars, 2 months to 2 years; 12 sows, 2 months to 3 years.
Smith, W. J.	Kilsyth	5 boars and 6 sows, 8 weeks; boar, 2 year.
Thompson, W.	White Rose	Young pigs, both sexes.
Tumely, W. J.	Madoc	Boar, 2 years; 3 sows; boar, 1 year; 3 boars and 5 sows, 1 month.
Vance, R.	Ida	Boar, 2 years; 15 boars and sows, 5 months.
Yuill, J. & Son.	Carleton Place	Stock, all ages.

Tamworths.

Baldwin, W.	Manitou, Man.	9 boars and 7 sows, 2 weeks to 2 years.
Boyd, A.	Kars.	2 boars and sow, 5 months; young stock, both sexes.
Brandow, A. W.	Walsingham Centre	40 head, both sexes, 10 weeks to 6 months.
Brown, W.	Paisley	30 head, both sexes.
Caldwell Bros.	Orchard	20 boars and sows, 3 months; 2 sows, 7 months.
Chute, H. J.	Somerset, N. S.	Sow and boar, 4 months; sow and boar, 1 year.
Colwill Bros.	Newcastle	Boars and sows, all ages.
Dack, R. F.	Port Credit	10 head, different ages.
Fox, J. P.	Winchester	Boar, 2 years; 3 boars and 6 sows, 3 months.
Gibson, D. J.	Bowmanville	12 boars and 3 sows, 6 weeks.
Hallman, A. C.	New Dundee	33 imp. boars, 8 weeks to 12 months; 68 sows, 8 weeks to 2 years.
Harkshaw, H.	Glanworth	23 boars, 1 to 13 months; 16 sows, 1 to 6 months.
Hoover, P. R. & Sons	Green River	75 boars and sows, 3 to 6 months.
Howden, J. J.	Peterboro	4 yearling boars; 20 spring boars; young sows.
Johnson, J. W.	Underwood	Boar, 1 year.
Lamb, A.	Foreman	2 sows; boar,
Laurie, R. J. & A.	Wolverton	3 sows, 10 months; boar, 10 months; boars and sows, 5 months; 15 pigs, 5 weeks.
McIntyre, D. J.	Whitby	Sow, 2 years.
Newell, J.R. & Sons	Crampton	Aged boar and sow; 14 boars and sows, 6 weeks to 8 months.
North, G.	Marden	Sows, under 6 months; stock, 6 to 12 weeks.
Owens, Hon. W.	Montebello, Que.	Young pigs; boars and sows.
Reid, R. & Co.	Hintonburg	17 spring boars; 14 spring sows.
Row, F.	Belmont	14 pigs, both sexes, 5 months; 10 pigs, 1 month.
Simonton, J. H.	Chatham	100 head, 6 weeks to 7 months.
Smith, H. D.	Compton, Que.	16 boars and sows, 6 weeks to 4 months; 4 sows, 6 weeks.
Smith, J.	Harrietsville	50 sows and boars; 40 pigs, both sexes, 6 weeks.
Steffler, A.	Formosa	6 boars and 7 sows, 6 months.
Treverton, C.	Belleville	Boar and sow, 2 years; 4 boars and 4 sows, 4 months.
Tumely, W. J.	Madoc	Sow, 1 year; boar and sow, 18 months; 8 pigs, 2 months; 5 pigs, 4 weeks.
Wiley, N.	Wisbeach	Boar, 15 months; 2 boars and 3 sows, 4 months; sow, 10 months; young pigs.
Wright, R.	Binbrook	9 boars and 11 sows, 4 to 8 months; young boar and sow.

Yorkshires.

Bowman, W. R.	Mount Forest	26 boars and sows, 3 to 7 months; 2 aged boars.
Brethour, J. E.	Burford	40 boars, 2 to 8 months; 75 sows, 2 to 6 months; 10 sows
Caldwell Bros.	Orchard	Boar, 14 months; sow.
Callbeck, J. W.	Augustine Cove, P.E. I.	3 boars, 6, 18 and 56 months; 10 sows, 4 months to 4 years.
Colwill Bros.	Newcastle	6 boars and 3 sows, 3 to 4 months; 2 sows, 1 and 2 years; aged boar.
Connolly, P. J.	Middletown, P. E. I.	Boars and sows, 4 months; stock, both sexes, 6 weeks; sow, 6 months.
Cousins, J. & Son.	Harrison	Boars and sows, 6 weeks.
Dack, R. F.	Port Credit	Stock, all ages.
Dool, E.	Hartington	100 head, both sexes, all ages
Drummond, D.	Myrtle	Boars and sows.
Featherston, J.	Streetsville	Boars, 8 months; 6 boars, 3 months; 12 sows, under 12 months.
Flatt, D. C.	Millgrove	70 imp. boars and sows, 5 months; 200 boars and sows, 6 weeks to 3 months.
Frank, A.	The Grange	Pigs, both sexes, all ages.
Gibson, R.	Delaware	20 pigs, 12 weeks; 3 young sows; young boar.
Godard, C. E.	Cobourg	Aged boar.
Honey, R.	Brickley	10 boars and 15 sows, 2 to 6 months; 2 sows, 2 and 3 years.
Hood, G. B.	Guelph	30 pigs, 4 to 12 weeks.
Howe, W.	North Bruce	Boar and sow, 10 months; sow, 9 months; 9 boars and 6 sows, 4 to 6 months; young stock.
Hurley, J. M. & Son.	Belleville	Sows and boars, 5 months; sows.
Johnson, J. W.	Underwood	5 boars and 6 sows, 4 months to 2 years.
King, O.	Wawanesa, Man.	Boar, 3 years; 2 sows, 1 year; young stock, both sexes.
McCrae, W.	Guelph	Young stock.
McDonald, J. B.	Muirkirk	4 sows and 2 boars, 3 months; young pigs.
Maloney, F. A.	Chapeau, Que.	46 pigs, both sexes, 4 to 6 weeks; 15 sows, 10 months; boar, 10 months; boar, 3 years.
Owens, Hon. W.	Montebello, Que.	Pigs all ages.
Parlee, M. H.	Sussex, N.B.	Boar, 10 months; 2 sows, 10 months.
Robertson, H. P.	Beachburg	Sow, 2 years; boar, 16 months; 15 pigs, 2 weeks to 6 months.
Rogers, L.	Cooksville	33 boars and sows, 3 months to 2 years; 30 young pigs, both sexes.
Ross, A. W.	Douglas	45 sows and boars, 6 weeks to 5 months.
Russell, F.	Cedarville	20 head all ages
Russell, J. A.	Precious Corners	25 boars and sows, all ages.
Shaver, S. & Son	Winchester Springs	Boar, 18 months; 17 boars and sows, 5 months; boars and sows, 2 to 3 months.
Smith, W. J.	Kilsyth	3 boars and 2 sows, 3 months.

Clester Whites

Bennett, G. & Pardo	Charing Cross	2 aged boars; 52 boars and sows, 2 months to 1 year.
Birdsall, F. & Son	Birdsall	Sows.
Bowman, T. E.	Berlin	24 boars and sows, 2 to 5 months.
Cairns, J.	Camlachie	40 head, all ages.
Chute, H. J.	Somerset, N. S.	2 boars and 4 sows, 4 months.
Denison, W. S.	Denison's Mills, Que.	2 boars and 11 sows, 5 to 7 months; 4 boars and 5 sows, 1 and 2 months.
Gillies, A. J.	Muirkirk	6 boars and 3 sows, 5 months, 2 aged sows.
Godard, C. E.	Cobourg	Sow, 12 months; aged sow; boar, 9 months; 8 pigs, 2 months.
Gummer, G. A.	Colborne	5 sows and 3 boars, 3 months; young pigs, both sexes; boar, 2 years.
Harding, R. H.	Thorndale	4 boars; 8 boars, 5 weeks.
McPherson, A.	Rutherford	Aged boar; 2 aged sows; 4 sows, 4 months.
Newell, J. R. & Son	Crampton	Pigs, both sexes, 3 months.
Row, F.	Belmont	Aged boar and sow; 3 sows, 4 months.
Runciman, G. A.	Warkworth	30 pigs, both sexes, 1 to 5 months; 4 aged boars and sows.

Poland Chinas.

Heron, H.	Avon	Stock, all ages.
McKay, J. F.	Parkhill	Boar, 17 months; 2 boars, 5 months; 3 sows; stock, both sexes, 3 to 5 months.
Morrill, F. H.	Way's Mills, Que.	Stock, all ages.
Young, F. P.	Rivard Corner, Que.	4 sows, 6 months; 2 sows and boar, 3 months.

Duroc Jerseys

Fraser, I. O. & Son	Fellows	Boar and sow, 10 months; 25 pigs, both sexes, 5 mos.
Tape Bros.	Ridgetown	Pigs, both sexes, under 1 year; 2 aged boars.
Tumely, W. J.	Madoc	10 sows, 4 to 9 months.

Less carbolic acid may be used and good results obtained.

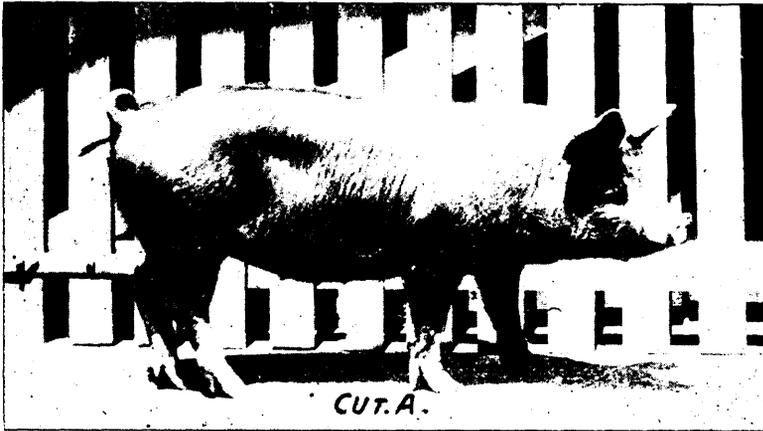
A few energetic applications will impart to the bark a smooth, healthy appearance.

The Ontario Agricultural College.

The only educational institution in the province which is intended to meet the requirements of those who intend to be farmers is the Ontario Agricultural College; and it has always been the desire of the Minister of Agriculture and those directly in charge at the college to make the course of instruction given thorough and practical. Additional equipment is being put in and changes in the course of instruction made from time to time, as the needs of the farmers seem to demand. It is not generally known that the course has been somewhat modified of late, in order that it may be more than ever suited to the wants and convenience of the farmers of the province, for whom the college was founded and is maintained.

From the correspondence received from intending students during the past few years it was seen that a great many who otherwise would have attended were kept from doing so on account of the work to be done at home in the early spring. Accordingly, it was decided to shorten the college year from 8½ months (Oct. 1st to June 15th) to 6½ months (Sept. 26th to April 15th), thereby allowing those in attendance to leave in time to reach home for the early spring work. When the longer session was in vogue, the officers of the college were required to attend Farmers' Institute meetings from the 1st to the 15th of January, thereby depriving the students of two weeks of valuable instruction at a time of the year when they were not required at home. Since the shorter course has been adopted the officers attend Institute meetings during the month of June. So, it will be seen that the college year has been shortened by only 1½ months. A part of the instruction formerly given in the course for an associate diploma had, of course, to be left off the new curriculum. The part left off is a very small portion indeed; and in deciding what part should be discontinued, the authorities, in every case, sacrificed the purely scientific to the more practical, thus making the course for an associate diploma, which extends over two scholastic years, include just as much instruction as ever in live stock, farm management, dairying, poultry and other practical subjects; but not so much of the purely scientific. Provision has been made to give those who wish to continue their studies a further course of two years, after which they may graduate from the University of Toronto as Bachelors of the Science of Agriculture.

That the farmers' sons of the Province have appreciated the change which has been inaugurated, is shown by the increased number of applica-



CUT A.—TOO LEAN.

A sample of the shoulder of unfattened hogs sold by the farmer at a loss to himself and with no satisfaction to the packers.

tions received to date. There are only a very few rooms in the residence which have not already been spoken for; but provision has been made whereby those who cannot secure rooms in the residence will be given board in the college dining-room and allowed to room in private houses near the college at the same cost as residence students. Those who room out will be required to comply with the rules of the institution regarding study, work, etc. About thirty students can be accommodated in this way. The number of applications from first, second, and third year students is larger this year than at a corresponding date in any previous year.

Those who are directly interested in dairying should not overlook the new feature introduced in connection with the dairy school. Instead of only one session, from the 3rd of Jan. to the 22nd of March, there will also be a session from the 4th to the 22nd of December, inclusive. The shorter session is intended to meet the requirements of those who cannot spare the time for the longer session.

The Bacon Hog.

An extract from the report of the Superintendent of Farmers' Institutes, not yet published:

How the Packers View the Situation.

FACTS FOR SWINE FEEDERS TO PONDER OVER.

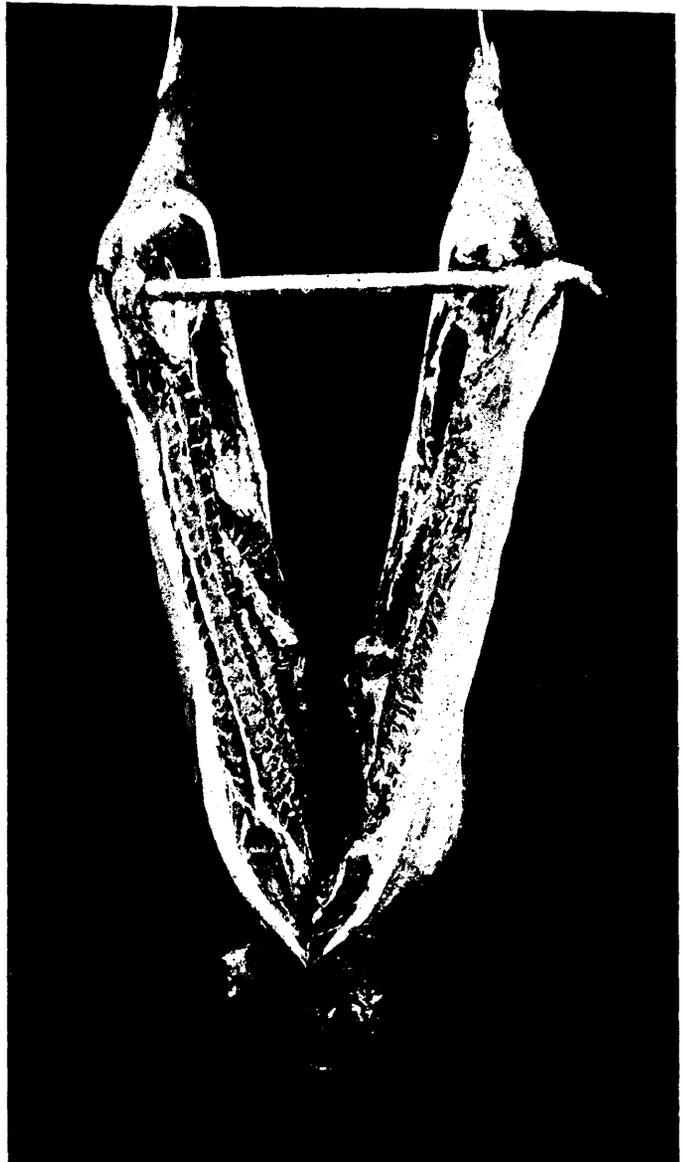
If "line upon line and precept upon precept" are effective we ought now to have the best kind, and the best fed bacon hogs in the world, as we know of no country where so much on the above subjects has been published in the general and agricultural press, and where the Governments, both provincial and federal, have aided breeders so much by experiment and advice as has been done in Canada. Unfortunately, those standing most in need of the information are that class of farmers who do not take an agricultural paper, and look with contempt on

those advanced farmers who have spoken at the Farmers' Institutes. We are free to admit, however, that within the last five or six years the farmers of Ontario, speaking generally, have ably seconded the packers' efforts by trying to produce the quantity and quality desired. There is still, however, much room for improvement.

INTERESTS OF FARM AND PORK PACKER IDENTICAL.

It cannot be too often stated that the interests of the pork packer and the farmer are one, and that as these two produce an article for export of high excellence, so as to command the best price in England, so the whole country is benefited, or the reverse, if through bad judgment or carelessness an inferior article is produced. Therefore every farmer who breeds and feeds with the result that the finished product from his hogs is a second rate article, inflicts a needless loss upon the whole country. He may succeed in passing off his hogs at the best price, but this does not alter the fact that the net return to the country is smaller by reason of the faulty article which he has produced. The amount of this loss is to be multiplied by the number of careless, indifferent, unintelligent farmers, who persist in raising stock, the product of which sells at a lower price than the best.

We are sorry to report that there are still a large number of pigs marketed that, no matter at what price they are



CUT B.—TOO LEAN.

The pig shown in cut A after killing.

LEAN AND FAT HOGS.

It appears to be difficult to make some persons understand what we mean when we say we want lean hogs. They appear to think we mean skin and bones—we mean hogs whose nature it is to turn their food into lean instead of fat and lard.

It is true that the objectionable animals are but few in number in comparison with the whole, but they make themselves felt so severely because they suit no one, and if buyers get them for half price they are still dissatisfied. These small hogs are culled out in Chicago, and go by the name of "pigs."

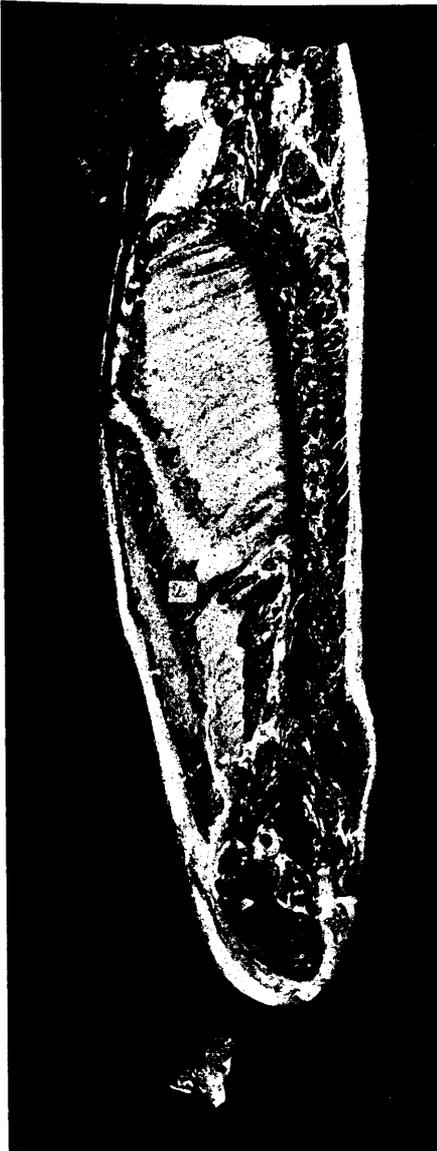
If this should meet the eye of drovers, we should strongly urge them not to buy this kind at any price. We are aware that some farmers insist on selling all or none, but that ought not to influence the buyer.

Now lest the foregoing should lead any farmer to the other extreme, we show photos of animals that are too fat. See illustrations D, E, and F. D (1) is a cut of a prize pig taken on the Exhibition grounds, Toronto. The photo of D (2) was taken at our packing house; in the latter and in cuts E and F you have a hog weighing 200 pounds alive; the same animal dressed and split, and a side of the same cured and ready for shipment. As a rule, the bacon from such a pig will have to be sold, say, an average of five shillings per 112 pounds less than prime lean, and, of course, we in self-defence are compelled to discriminate against it, which we do by paying less by one-fourth cent to one cent per pound according to the condition of the market in England. We would in the strongest manner possible urge feeders not to keep them so long at the trough. They stand in their own light by so doing. Every year it is more difficult to sell fat bacon, and we are safe in saying that the fat hogs we buy are "thieves and robbers;" they are drones in the hive; they rob the prime, well-fed, fleshy sides.

Besides, these hogs rob the feeders, as careful feeding experiments have shown they do not give as good a re-

turn for the food consumed after they get into ripe condition. We are aware that the popular idea is the opposite, but repeated experiments prove the truth of this statement.

But there is another kind of pigs that are doing us and the country at large a world of injury. We refer to prematurely-finished pigs weighing 145 to 160 lbs. live weight. The nearer they are to the lower figure, the more objectionable they are. As regards quality, no fault can be found with most of them, in fact they are simply beautiful to look at, and to use an



CUT C.—TOO LEAN.

Side of pig shown in cut A.—Note the slight thickness of fat on the back, considerably lower than the standard.

bought, entail a loss on the drover, the packer, the storekeeper in England, and on the consumer, besides injuring the reputation of Canadian bacon, for though no packer of any reputation will put his own brand on the sides or on the boxes of such bacon, it is known by the buyer to be Canadian product, and, of course, the good name which has been so painfully and laboriously secured suffers.

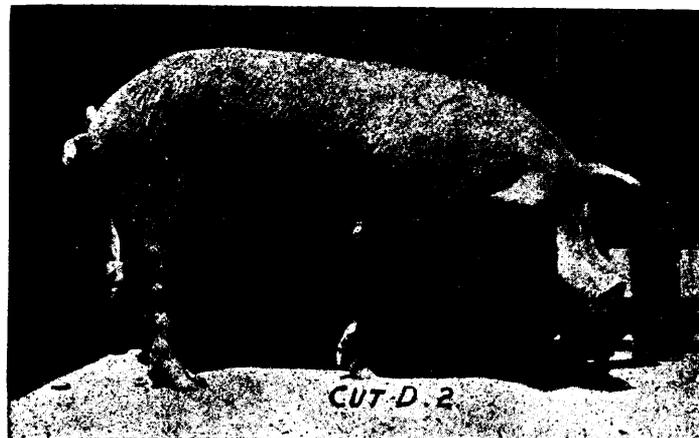
In this particular connection we are referring to the pigs that are sold by farmers to drovers that are simply not fattened at all, and are nothing more than stores. A sample of such is seen in the three cuts marked A, B, and C, which show the animal alive and dressed.

There you have the pig alive weighing 145 lbs. Then after being killed, dressed, and salted, and ready for packing, what is it? "Skin and misery," as the London dealers call it. If that pig had been fed to about 170 or 175 pounds, or possibly a little heavier, it would have been a very useful animal.

CUT D 1.—TOO FAT.
Taken at the Toronto Exhibition.

ungrammatical and common expression, no doubt "eats well," but the size is objectionable to buyers, and not a side made from hogs of this weight can be sold on the London market. That manufacturer, or farmer, or vender is wise who produces for his customers what they want, and are willing to pay a good price for; and that man is not wise who tries to force on buyers goods they don't want.

This class of hogs is a very serious trouble and loss, and the product can only be sold in moderate quantities in one or two districts, and when there is a surplus over what these districts can absorb the price goes down many shillings per cwt. Therefore, we appeal to farmers not to produce this kind, or in other words not to force them. On the question of feeding, and science of breeding, we wish to avoid

CUT D 2.—TOO FAT.
Mark the heavy shoulder.



CUT E.—TOO FAT—DRESSED.

The thickness of fat on back, especially on the top of the shoulder, causes this carcase to be discounted against, as much as 1c. per lb.

being dogmatic, positive and dictatorial, but our opinion is that these little, objectionable, well-fed pigs come about by being shut up and fed forcing food from infancy, which produces a finished animal of light weight in four months.

This style of pig is shown in cuts G. H. and I., and they clearly show to every one who reads the foregoing how objectionable they are, and what a serious menace to the business.

These light medium and fat hogs are culled out in all American markets, and go by the name of "skips," and always sell very low. They are sometimes called "block hogs," as butchers in New York buy them, when they are cut up on the block for fresh pork. They are altogether too light for bacon, and we earnestly hope that Canadian farmers will set their face against them. The discrimination against them will be increasingly severe.

Mr. Wm. Harris, the hog buyer at the Toronto Cattle Market, has just returned from a trip across the Atlantic. He visited the leading bacon-cur-

ing houses in Ireland, and was struck with the depth of body of the Irish hogs as well as length, and realizes more than ever the short-comings of Canadian hogs, and that it is caused by farmers here finishing them too quickly. They do not get time to grow and develop. No doubt much can be done by judicious breeding, raising only for this purpose long-bodied, deep-sided animals, but the craze for marketing early is at the bottom of it.

SOFT HOGS.

And now we come to the most serious matter of all, a sin, not of omission, but of commission, which has done more injury to the good name of Canadian bacon than anything else during the last five years. We refer to the thousands of soft hogs that have been marketed, and we attribute it to the hogs being fed on clover and corn, or possibly roots, although we incline to the belief that clover is at the bottom of the trouble. This soft bacon is looked on in England as an abomination.

We give a few extracts from letters

of our London agent on the subject; "We deeply regret to see so much second and inferior bacon coming along—we have been deluged with this lately. The agony seems to have been prolonged this year, we ought to be right out of it now.

"We are sorry to see that your farmers are still sending in these small hogs in such quantity, and also that there is so much ill-fed, grassy stuff coming. Whatever you do, waken them up. The Danish farmers made the mistake, and the consequence is that they are suffering bitterly for it. Keep your Canadian farmers right up to the mark on feeding.

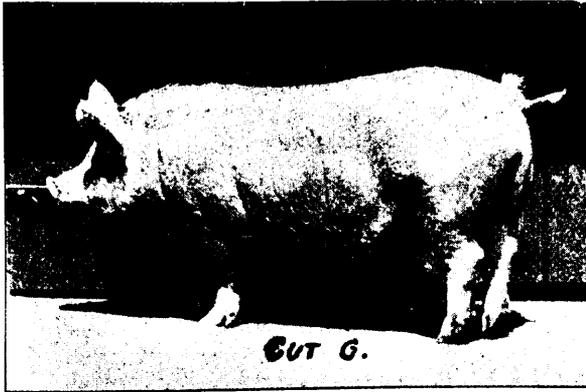
"Our worst feature is, Canada's smothering us with an extraordinary amount of bad stock, soft seconds, miserable stuff.

"We regret to say that we have a pile of rubbish that we can scarcely give away. We have really overdone the trade with it, and they resent it. We are simply amazed at the piles of this soft, unsaleable bacon that you are shipping us. Work how we will we seem to be smothered with it. The trade is sick to death of it.



CUT F.—TOO FAT.

Side view of part of carcase shown in cut E.



Cut G.—A pig forced from birth.

"We are not holding this bacon for price; we are holding it because we are compelled to do so, having no demand from any quarter. They will not have it in South Wales; they will not have it in Bristol; they kick it out of London; and in the South they will have nothing of the kind.

"In the North they tell us frankly they would sooner have good United States bacon than this soft Canadian at 10s. per cwt. less money on account of its softness and oiliness.

"Whatever has happened to Canada! It has done the hog trade a lot of harm and injury, and the sooner it is put right the better it will be for the Canadian trade, or it will soon cease to exist. You cannot sing this song too loudly over Canada; the whole country wants waking up to the danger."

Up to this point all feeding experiments have been made to find out what plan would give the largest percentage of return for the food consumed. We assert that these are worse than useless unless the quality of meat produced be taken into consideration. This is the first and all important point, and it is impossible to lay too much stress on it. The whole matter is in a nutshell. Canadian farmers receive from $\frac{1}{2}$ c. to 2c. per pound more for their live hogs than American farmers, and Canadian bacon brings a proportionate price in England. Why? Because the English are patriots! But because the Canadian is of superior quality, hence it would seem to be wasting words to insist on the necessity of keeping it up to the highest point, and the unreasonableness of expecting to receive this extra premium while we feed trash that produces soft, oily meat.

THE MODEL BACON HOG.

And now having at length and in detail described the animals that are objectionable, we will try to describe the model hog, the beau ideal.

First, he must be of the right breeding, say a cross of improved Yorkshire, or Tamworth, or pure-bred Tamworth, at all events a long-bodied, deep-sided animal, having a small head with light shoulders and good hams, and that when finished, say at six months old, will weigh 170 to 180 lbs., and, if a

strip is stretched along the back and belly, will show straight lines, and when split will show about $1\frac{1}{2}$ inches of fat all down the back without any hump on the shoulder; it should be thick in belly, and the carcass *full of flesh*. It is easier to explain and particularize what is radically wrong than to enter into details regarding the best. There are scores, nay, hundreds, of farmers who are turning out hogs that could not be more even and regular if

cast in a mould. They have also learned the best condition for marketing, and we are receiving thousands of such.

That the readers of this may understand and realize the importance of this question, let us suppose that by some despotic act the sizeable prime quality of hogs could not be sold for three months, and the feeding went on as usual, and the objectionable hogs continued in their present condition. We venture to say that the export bacon curers would, at the end of that time, refuse to buy a hog, and would forthwith shut up their factories. The prime quality sizeable hogs are the saving salt; it is these that have given Canadian bacon its good name, and without them the undesirable kinds could not be sold at all. We have appealed to the self-interest of farmers, now we would appeal to their patriotism. Let one and all unite in striving to produce the very best and highest priced stock. We are free to admit that Ontario has done well, both in quality and quantity, but the excellence of the best accentuates the worst, and makes the producers of unsuitable hogs the more inexcusable.



Cut H. Forced pig, dressed—too thick and fat.



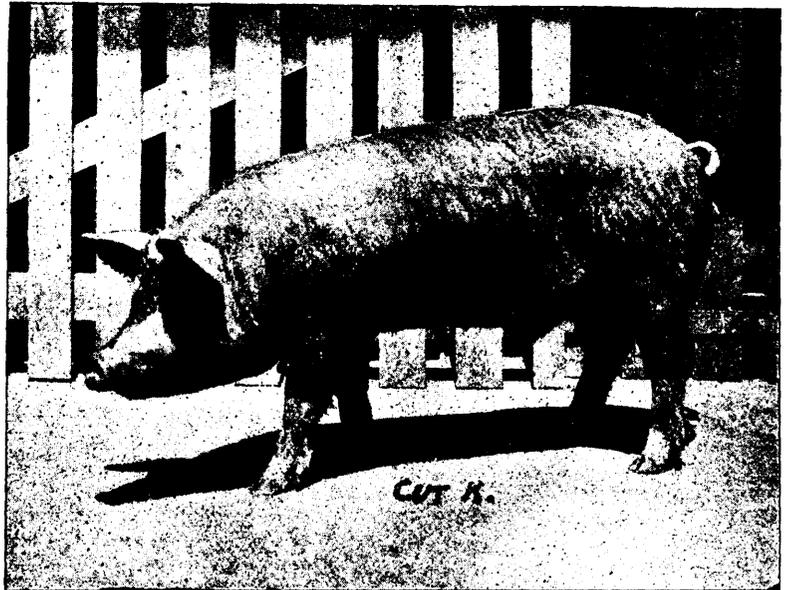
Cut I.—Side of forced pig—too thick and fat.

In cuts K, L, M we show a sizeable hog of prime quality, afterwards hanging split, and a side of bacon from the same cured ready for shipment. Readers will notice how even the fat is all down the back, and this is what feeders should aim at.

QUALITY WANTED.

To sum up, what the bacon trade wants is quality. This word is comprehensive; it covers style, symmetry, weight and texture of meat, and all the experiments in feeding, whether by individual farmers or at the Government Experimental Farms, are worse than useless—they are mischievous, unless this is not only included, but made the prominent feature.

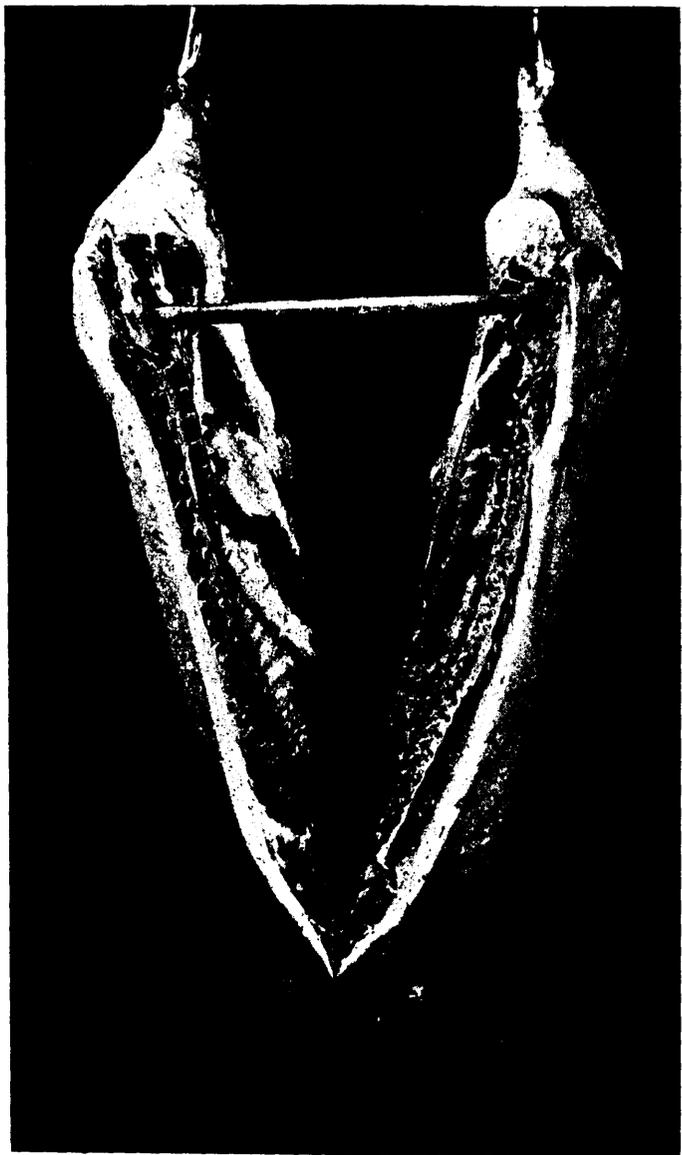
To take this opportunity of assuring Canadian farmers that unless they do their part in judicious feeding for quality the present happy condition of things cannot last; Canada holds no patent on it. To what condition do we allude? When we were paying 6c. for live hogs they were being sold in Chicago and in Buffalo at \$3.75 to \$4, and even to day, at the reduced price, of say $4\frac{3}{4}$ c. for No. 1, we are offered



Cut K.—The Packers' Model.

Northern Michigan pea-fed hogs in Buffalo at \$4.10 to \$4.15. Further, we can assure you the pork packers and state agricultural colleges and societies of the United States are not

asleep. They have had for several years a very impressive and startling object lesson before them, and they are making great efforts to improve their style of hog feeding.



Cut L.—A carcass of prime quality; fat evenly distributed all down the back.



Cut M.—What is required for the British market. Side of bacon of first-class quality. Note the even distribution of lean.

Last winter the Armour Company imported into Chicago a car of prime Canadian hogs that they might analyze and study them in detail, and are urging American farmers to copy us in feeding and breeding.

AMERICANS CATERING FOR THE BRITISH MARKETS.

Only lately we had a letter from the principal of an agricultural college in the United States, seeking information along these lines. Now consider what will follow: American packers will select and buy hogs of the Canadian type fed in certain localities. They will make special efforts to get the product of these hogs into the London market at a trifling advance over the ordinary American. The shop-keepers will find it to be of excellent quality and will substitute it for Canadian, putting the extra profits in their pockets, and thus, unless the quality of Canadian is kept up to the highest standard, it will lose its grand position

and never regain it. Farmers the last few years have found the raising and feeding of hogs the most profitable branch of agriculture, and it would be a great pity to spoil it by criminal carelessness in feeding. Farmers and packers are interdependent. Both should aim at the highest excellence, which will redound to the common good and to the country's prosperity.

HOW IRELAND IS IMPROVING HER PIGS.

The Bacon Curers' Association of Ireland, which comprises the leading firms in the trade at Cork, Limerick and Waterford, are now distributing all over Munster well-bred Yorkshire boars that are calculated to greatly improve the breed of pigs raised by farmers in the southern province. These boars have been obtained at considerable expense from the best herds in England for the purpose of infusing, in due time, new blood into Irish-bred swine, so that the progeny will be most likely to suit the requirements of the bacon trade as far as the raw material is concerned. In connection with the maintenance and proper development of the Irish bacon industry a much better class of animal than those usually raised throughout Munster is urgently needed, hence the object in view in importing the best bred boars that could be obtained from England and their distribution amongst the farmers of the south.

A number of inspectors have been appointed by the Bacon Curers' Association, whose business it is to travel through the Province of Munster, placing the boars at centres where most required, and at the same time to diffuse the most reliable information to farmers and others interested in the matter as to the best method of raising pigs suitable for the Irish bacon trade of the future.

The boars have been located with farmers whose holdings are centrally and conveniently situated, to facilitate and encourage the farmers of each district to avail themselves of the opportunities offered them in this way of improving the class of pigs bred in the southern counties.

As a rule, the farmers are only too glad to avail themselves of the boon which the thoughtfulness of the Bacon Curers' Association has provided for them in this respect. These boars are distributed practically free in each district for breeding purposes, but the animals are held by way of loan from the association, who still retain the boars as the property of the bacon curers concerned in the scheme.—*The Wm. Davies Co., Limited.*

TO BE CONTINUED.

This treatise on the bacon hog will be continued next week, with a number of other illustrations. A number of articles specially prepared for this issue will also appear later on in this department.

A Boy's Experience with Limburger Cheese.

"Ma sent me to town to pay a bill at the grocer's last Saturday. The 'boss' behind the counter made me a present of something wrapped in a piece of silver paper, which he told me was a piece of Limburger cheese. When I got outside the shop I opened the paper, and when I smelt what was inside I felt tired. I took it home and put it in the coal shed. In the morning I went to it again. It was still there. Nobody had taken it. I wondered what I could do with it. Father and mother were getting ready to go to church. I put a piece in the back pocket of father's pants, and another in the lining of ma's muff. I walked behind them when we started to church. It was beginning to get warm. When we got in church, and after singing the first hymn, mother told father not to sing again but to keep his mouth shut and breathe through his nose. After prayer, perspiration stood on father's face, and the people in the next pew to ours got up and went out. After the second lesson some of the churchwardens came round to see if there were any stray rats in church. Some more people near our pew got up and went out, putting their handkerchiefs to their noses as they went. The parson said they had better close the service and hold a meeting outside to discuss the sanitary condition of the church. Father told mother they had better go home one at a time. When they got home they both went to the front room, but did not speak for some time. Mother spoke first, and told father to put the cat out of the room as she thought it was going to be sick. It was sick before father could get it out. Mother then turned round and noticed that the canary was dead. Mother told father not to sit too close to the fire as it made matters worse. Just then the hired man came in and asked if he would throw open the windows, as the room smelt very close. Father went upstairs and changed his clothes and had a hot bath. Mother took father's clothes and offered them to a tramp, who said, 'Thanks, kind lady, they are a bit too high for me.' Mother threw them into the creek. Father was summoned afterwards for poisoning the fish. Next morning father had a note sent to him. Father came to wish me 'good night' at one o'clock, with the note in one hand and a razor strap in the other. I got under the bed. The people next door thought we were beating carpets in our house. I cannot sit down comfortably yet. I have given my little sister what was left of the Limburger cheese. I thought it a pity to waste it."—*Ex.*

Jakey Krouts: Vat vas a standing army, Fritz? "Vy, dot vas an army dot vill stahn mos' anyt'ings, vrom canned jackass to embalmed pig's ankle."

The Farm Home

The Air of Our Houses

By Frank T. Shutt, M.A., F.C.S.,
Chemist, Dom. Expt. Farms.

There is certainly no blessing more liberally bestowed by nature than pure fresh air, and especially is this the case in Canada. Analyses, as well as the general healthiness of our people, furnish ample and strong evidence in support of this statement. The fact, however, remains that many of us—and this refers to residents both of the country and towns—do not sufficiently realize the value of fresh air in our houses, or, in other words, do not realize the great menace to health there is in impure air. By impure air, I mean air loaded with the products of respiration, with the stale odours of cooking, with gases produced by decay of organic matter, with sewage emanations, etc.

this gas (carbonic acid) every twenty-four hours.

Further, air given off by the lungs contains a considerable amount of organic matter, which we may rightly conclude is of a particularly deleterious nature to health when continually and constantly breathed. Indeed, recent investigations have gone to show that this is the constituent most to be dreaded in respired air. Again, such air may contain disease germs; at all events, it presents conditions most favorable for their development and propagation.

The action of impure air upon the system usually is insidious. Like polluted water, it frequently works in a slow, treacherous and stealthy way, gradually undermining the health and impairing the general vigor and tone of the body. Giddiness, fainting fits,

as for pleasure. We should heed their warnings. The unpleasant odor, and sometimes even taste, so frequently experienced on entering ill-ventilated houses and crowded rooms is a sure indication of air that will act as a slow poison. Notice the pleasurable sense of relief on going out from such into the fresh air. We should take care that we do not habituate ourselves to unpleasant odors in the house, but rather recognize them as danger signals and seek to remove their cause.

No special apparatus is necessary to supply our farm houses and country schools with a plentiful supply of fresh air. Sitting in strong draughts from open windows and doors is certainly to be avoided, but there are numerous inexpensive devices for distributing the current, so that with their aid no danger



WHEN THE HORSELESS CAB STRIKES THE JUNGLE

—Puck.

Air is vitiated by respiration. Its oxygen is thereby largely reduced. In the combustion of the food materials in the blood, between 4.5% and 5.0% of the oxygen of the air we breathe is converted into carbonic acid gas—a product distinctly inimical to health. Fresh air contains only three to four volumes of carbonic acid per 10,000, but expired air contains between 400 and 500 volumes in the same quantity. The extent to which air may be rendered impure in a poorly ventilated room may be understood when we remember that an adult individual produces or expires 16 cubic feet of

nausea and headache are among the more immediate effects of breathing air of ill-ventilated rooms, but it should be further understood that indigestion, diarrhoea and allied disorders of the alimentary track are encouraged, if not caused, by this unseen foe. It has been clearly proven that those working and living in an impure atmosphere are not so able to resist the attacks of germ diseases (such as typhoid, etc.) as those constantly breathing pure air.

Our senses of smell and taste were given to us to be used, and for our guidance in matters of health as well

need be feared, even in winter. Especially should the air of the sleeping room be pure and fresh; a headache and unpleasant taste in the mouth in the morning are often caused by breathing impure air.

There are many other phases of this subject that might be discussed, but these must be left for future articles. We have learnt that air once breathed is detrimental to health, that its action may be, and often is, of an insidious character. This is an important lesson and one that it behooves us all to act upon.

Bread

By Laura Rose, Lady Instructor in Dairying, O.A.C., Guelph.

It is the things we are interested in—the things we are familiar with—which we like to hear and talk about, and so we find a bit of newsy gossip relating to our next door neighbor far more exciting than the latest daring bank robbery in a distant city.

I am going to say a little about bread, for it certainly is a very familiar article of food, and one which everybody apparently likes. This being the fact, every thrifty housewife's aim should be to have upon her table the very best bread procurable. But our ideas of the "best" may differ.

I fear, as cooks, we study to please the eye more than the palate or stomach, and therein have we greatly erred.

Food is taken that our bodies may be built up, and that energy, heat and nervous activity be maintained, and whereas bread forms so large a portion of our diet, and is relied upon to such a great extent to supply the demands of the body, we should take special thought to the food-value of the bread we eat, in connection with its digestibility. The appearance, odor and taste all help to increase its nutritive value, as they excite the flow of the digestive juices, and as a result a larger quantity is eaten and is better digested. Fresh bread, sour bread, underdone bread, heavy, soggy bread are accountable for much of the serious stomach trouble which is so rife in our country.

Especially should care be exercised with regard to the kind of bread fed to infants and invalids. I have seen many a child eating a huge slice of fresh baker's bread—bread which, had I pressed together in my hand, would have become nothing but a lump of dough. As I thought of the tax put upon the dear little child's frail stomach, my heart ached for the lack of knowledge the mothers of our land have.

Much more thought and study are given to the care and feeding of the calves in the farmer's stable than to the rearing of the young at our own tables.

Lately in talking with a baker the question of lightness in bread came up. He said the people thought by getting a large-sized loaf they were getting more for their money, whereas he himself knew that a drier, closer, better-baked loaf, would be vastly superior, but he had to meet the demands of the people and give them what they wanted.

The great objection I have to baker's bread is that it must be eaten fresh. Home-made bread is at its best when three days old and still quite good at the end of a week. Not so baker's bread, it seems to lose instead of develop flavor. A fact which may appeal to many is that, apart from the many qualities in favor of good home-

made bread, about one-third of the bread bill can be saved by baking at home.

Bread to be nutritious should readily crumble in the mouth to enable it to mix freely with the saliva, which acts on the starch, converting it into sugar and preparing it for further assimilation. Bread contains a large percentage of carbonaceous matter and a much smaller amount of proteids and ash.

We could hardly call it a balanced ration, but eaten with meat, butter or cheese all the essentials are secured for the proper support of the body.

Bread is commonly made from wheat flour. To obtain the best results much care should be exercised in the selection of wheat from which the flour is to be manufactured. Recent chemical investigation at the O. A. C. showed that flour made from some of the softer varieties of wheat contained only from five to six per cent of gluten—the nitrogenous, muscle-building element of the grain—while that from the harder varieties had as much as eleven per cent gluten.

The lightness, the digestibility and nutrition of the bread depends largely on the amount and quality of gluten contained in the flour. This is why Manitoba wheat has such a preference over many of our home-grown varieties.

While much importance may be attached to the flour, too much stress cannot be laid upon the yeast used to raise the bread. Many fail in bread-making owing to their ignorance of the nature of yeast.

Yeast consists of microscopic vegetable organisms—tiny little plants—which under favorable conditions grow and multiply very rapidly. In their presence starch is converted into sugar and the sugar changed to alcohol and carbonic acid gas. The gas is quite perceptible in the sponge and dough, but, along with the alcohol, passes off in the baking.

Like other plants, yeast when subjected to too great heat, will die, so when putting dry yeast cakes to soak

care should be taken not to have the water hot, nor should the sponge or dough be kept over eighty degrees. This is a favorable temperature for the development of the yeast plant. Cold seriously retards their growth and causes the bread to be "slow." I might just here give my formula for yeast which makes excellent bread: Peel and grate raw, four medium sized potatoes into a stone crock, add three tablespoons of flour, two tablespoons of sugar and one tablespoon of salt. Take a generous handful of fresh, loose hops, put in a granite kettle, pour over one quart of cold water and let simmer for fifteen minutes. Strain the boiling hop water over the ingredients in the crock. Let cool to blood heat then stir in one fresh, dry yeast cake which has been soaking in a little lukewarm water. If made in the morning and kept warm, it will be ready for use by night. Next day put it into a self-sealer and place on the cellar floor. It will keep for several weeks.

I make a rather stiff sponge at night, using a large cup of yeast for eight small loaves. In the morning sift sufficient flour into the bread tins, sprinkle over two large tablespoons of salt, pour over the sponge, mould into a stiff dough and knead thoroughly for fifteen minutes. This thorough kneading gives a nice, fine, white, close-grained bread. When the dough has risen twice its original bulk, form into small loaves.

I would just like to say a word regarding "show" bread. I have taken special notice for a number of years of the exhibits in bread at our fairs, and in four cases out of five the loaves are too large. It is almost impossible to thoroughly bake to the centre a large loaf, and more especially so if two or three loaves are baked in the same pan. If the yeast plants are not all killed during baking fermentation still goes on and the bread becomes sour.

It is well to slightly prick the loaves with a sharp fork before putting them in the oven. This allows the gas to

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escape and you will not have large cavities under the top crust.

The oven should be moderately warm. If too warm a thick crust immediately forms which acts as a non-conductor of heat and the result is an underdone centre and a burnt crust. If, on the other hand, the oven be too cool the bread rises too much and often exhausts itself and sinks, giving a loaf with a very light top and a heavy streak near the bottom crust. Usually bread requires from an hour to an hour and a quarter to bake.

When taken from the oven lift at once from the pans, and do not cover with a cloth, but lean it up against something so the air may circulate freely all around it. Have a covered tin to hold the bread. Scald it out every bake day and put it in the sun to dry and air, and it is a good plan to give it an airing in between bakings. On no account put clothes or paper, cakes, etc., in your bread tin.

I never use potatoes, shortening or sugar in making bread as I think a sweeter, finer flavored bread can be made without them.

We Need a Rest

By Megyra.

In looking over a report of Insane Asylums of Ontario, I find that up to the end of 1896 of the nearly twenty-two thousand patients who have been admitted to asylums prior to that date wives, housekeepers and domestic servants make up over one-third of the entire number, and each year there are more women admitted than men.

There is no effect without a cause. What cause produces so much insanity among housekeepers and domestic servants? Is it that we are mentally weak when we accept such positions? Is it that there is something in our occupation which destroys our reason? I have been unable to find what percentage of these women come from the farm. Too large I feel sure.

I find also, that ill-health is very common among farmers' wives and daughters. This is not as it should be. We should be the equals of our husbands and brothers. We should be strong mentally and physically, perfect specimens of Canadian womanhood. We are not. We are worn out, delicate women at forty, and look years older than our city sisters at the same age.

"Every effect must have a cause." Is not the cause of ill-health and insanity often overwork?

There are very few farmers who intentionally give their wives more work than they are able to do. They do not realize that though our work is light compared with the heavier out-door work, our bodies are weak, terribly weak, compared with those of our brothers.

So much of our work is unnecessary. For example, there is not one farmhouse in ten which is supplied with even soft water from a pump or taps in the house. Then we have either



Rock Salt

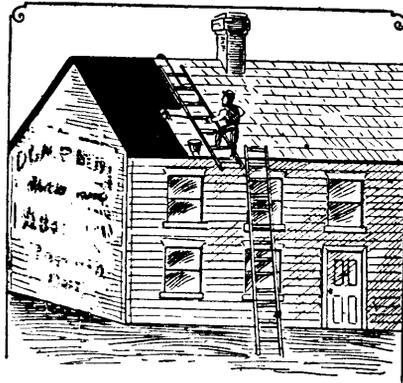
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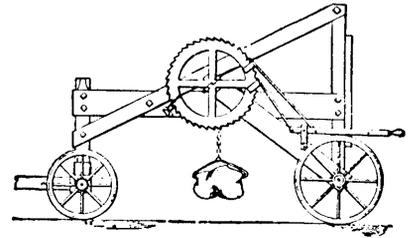
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Dashing Daring Mlle PROSPETTO

introducing her two educated horses, HEPHIZBAH and DON QUIXOTE. Many other Acrobats, Contortionists, Aerialists, Tumblers, Jugglers, etc.

Balloon Ascensions.—Single and Double Ascensions and Parachute Leaps and Balloon Races.

Elaborate Fireworks.—"British and Americans at Samoa."

Exciting Races.—Running, Trotting and Pacing. \$1,925 in Purses.

Grand Agricultural and Industrial Display. Massed Bands of Music. **Excursions on all Railways.**

Admission to Grounds, 25c. Carriages, 25c.

For farther particulars, Prize Lists, Entry Forms, etc., apply to H. R. FRASER, Mgr.

OUR MARKET REPORTS

and Forecasts are of great service to every Farmer. They give present prices and prospective values.

the labor of going up and down steps and carrying in pails, for some distance, all the water we require; or, as is often the case and is very much more laborious, we must set out barrels and tubs every time the weather looks like rain. The wasted time and strength in one year would more than pay for a cistern.

Our houses, too, are so badly planned that we waste miles of travelling in a year. Very often the store-room and flour bin is up a flight of stairs from our baking table. Our cellars are not supplied with dumb waiters, and we have steps innumerable which might be saved. It is the same with outdoor work.

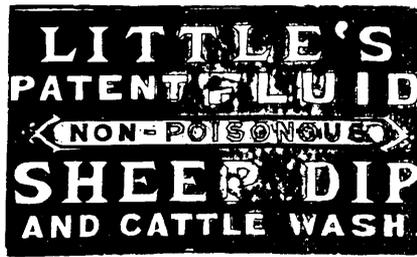
I have seen a woman walk some distance to the barn carrying two pails of food for the pigs, and the three men of the house, immediately afterwards, go empty-handed. Now, someone says, "Let her, if she is such a fool." It is not that the men are weak or lazy or unwilling to do such work, but it has been a habit of hers for, perhaps, forty years and no one thinks of a change.

It is not that men want to treat their wives with less consideration than they treat their stock. They do not realize that many times on nearly every farm this is done. We would call that man a fool who would keep on working a sick horse, but time and again we see the ailing, suffering wife, working, and often doing unnecessary work, when she should have the best stall, so to speak, and the best of care, of food and of attendance. What is she doing? Why does she do it?

Perhaps she is baking pies and cakes because John likes them, perhaps she is on her knees scrubbing for fear the neighbors might drop in, perhaps she is ironing the children's "frilled" clothes because she wants to be equal in appearance to other people.

We do not treat our husbands as they treat their stock. They feed the most nourishing food at the least expense, to be had; we overwork ourselves preparing expensive foods which contain little nourishment, just because the men have learned to like these foods. There are lots of things we like that are not good for us and anyone is unkind who provides them for us.

Then, too, we sew and sew, quilt patches, carpet rags, and other expensive luxuries. This fall when Mary brings out her bundles of rags to cut and sew in what should be her resting hours, if John would confiscate the whole lot, run them through the cutting-box and put them in the manure-heap, he would be both money and comfort ahead. A nervous wife is not comfortable to live with, an over-worked wife is always nervous. Blankets and one-piece comforters are much better than patchwork quilts. Every housekeeper and indoor worker needs rest and change of scene and not to be everlastingly tied to the kitchen. Such rest will save very many dollars from the doctors and



The Original

Non-Poisonous Fluid Dip.

Still the Favorite Dip, as proved by the testimony of our Minister of Agriculture and other large Breeders.

FOR SHEEP

Kills Ticks, Maggots; Cures Scabs, Heals Old Sores, Wounds, etc., and greatly increases and improves growth of Wool.

CATTLE, HORSES, PIGS, Etc.

Cleanses the skin from all Insects, and makes the coat beautifully soft and glossy.

Prevents the attack of Warble Fly.

Heals Saddle Galls, Sore Shoulders, Ulcers etc. Keeps Animals Free from Infection

No Danger, Safe, Cheap, and Effective.

BEWARE OF IMITATIONS.

Sold in large tins at **75 Cents**. Sufficient in each to make from 25 to 40 gallons of wash, according to strength required. Special terms to Breeders, Ranchmen, and others requiring large quantities.

Sold by all Druggists.
Send for Pamphlet.

ROBERT WIGHTMAN, Druggist, Owen Sound
Sole Agent for the Dominion.

STOCK LABELS



Also three sizes of Punches to insert them in the ear. I also make a very handy Bag, Truck and Bag Holder combined, with which a boy can fill bags with grain and load them on the wagon with ease. Please send for circular and price list, and send on your orders, the more you send the cheaper we can make them. Good reference given if required.

R. W. JAMES, Farm Implement
FORWARDING AGENCY
No. 119 KING ST., BOWMANVILLE, ONT.

THE FAMOUS WASHER



The Cheapest Machine Made.

Is the **Quickest, Cleanest and Best** Washer in the market, and the most suitable machine for the farmer.

A giant for work, and will last a lifetime. Circulars and price lists free.

TORONTO NOVELTY WORKS
J. A. GOWANS, Proprietor.
154 SPADINA AVE., TORONTO, ONT.

DES MOINES INCUBATOR CO.

The **BEST** and the **CHEAPEST**

95 PER CENT. hatches are often reported by those who use these Incubators. One reason for this record is absolute uniformity of temperature in egg chamber. Correct instructions for operating; has fire-proof lamp. A great mistake it would be to purchase an Incubator or Brooder without first getting a copy of our 148-page Catalogue. Send 3 cents for Illustrated Catalogue of Incubator, Brooder, Poultry and Poultry Supplies.

THE POULTRY'S GUIDE, New Edition, 15c. per mail.
O. ROLLAND, Sole Agent for the Dominion, 24 St. Sulpice Street, Montreal.

5 Days

5 Days

THE GREAT

SOUTHERN FAIR
BRANTFORD

September 16 to 21

EXPENDITURE OVER \$10,000.00

GREAT ARRAY OF SPECIAL FEATURES

The Southern Fair, starting on Saturday, September 16th in full blast, with music and special attractions, is continued (except Sunday) without let up every morning, afternoon and evening, till the close on Thursday, September 21st, at 10 o'clock p.m.

The full programme of special attractions is given each afternoon and evening, and is better and more varied than ever before in the history of the Southern Fair.

Opening Day—Saturday, Sept. 16th

Full programme of Special Attractions.
Extra Special Acts for this day only.
Military Band Concerts.
Programme of Athletic Sports.
Balloon Ascensions.

Judges' Day—Monday, Sept. 18th

Judging in all departments except Live Stock.
Programme of Special Attractions.
Grand Band Concert.
Programme of Athletic Sports.
Balloon Ascensions.

Citizens' Day—Tuesday, Sept. 19th

Full programme of Special Attractions.
Programme of Special Attractions.
Judging of Live Stock.
Grand Promenade of Horses and Cattle.
Judging of Hunters.
Hurdle Jumping.
Band Concert.
Grand Display of Fireworks.
Bombardment of Apia, by Britain and America.

Farmers' Day—Wednesday, Sept. 20th

Horse Judging continued.
Judging of Hunters and Hurdle Jumping.
Grand Promenade of Live Stock.
Programme of Special Attractions.
Band Concerts.
Grand Display of Fireworks.
Bombardment of Apia.

Ladies' Day—Thursday, Sept. 21st

Final Judging of Horses.
Hurdle Jumping.
Extraordinary programme of Special Attractions.
Band Concerts.
Special events for Ladies' Day only.
The whole to conclude with an Illuminated Bicycle Procession, to be followed by an Extraordinary Pyrotechnic Display and the Bombardment of Apia.
THE FIREWORKS will close each evening with the Extraordinary PICTORIAL PYROTECHNIC DISPLAY, entitled "The British and Americans in Samoa," showing the British cruisers "Porpoise" and "Royalist" and the American cruiser "Philadelphia." Apia is visible on the tropical island of Samoa. The cruisers are seen steaming in. After taking their positions, they bombard Apia. The scene represents Britain and the United States fighting for the first time side by side.

For Prize Entry Forms, and all information apply to
CHAS. W. YAPP, GEO. HATELY,
President. Secretary.

SCHOOLS.

TORONTO

**Don't
Hold
Back
That
Inquiry
For
Information**

Perhaps you've seen our advertisement before, and made up your mind to look into the matter of a business education. You put it off for a time. Don't delay any longer. Business is on the boom. Business hands and business heads are wanted along every line. Prepare to be on the crest of prosperity's wave. Learn Shorthand, Bookkeeping or Telegraphy.

**CENTRAL
BUSINESS
COLLEGE,
TORONTO,
ONT.**

W. H. SHAW,
Principal.

HAMILTON.



Hamilton. - - Ontario.

FOUNDED NEAR 40 YEARS.

Reopens on 5th of September.

A College of Business and Shorthand of the highest grade.

Write—R. F. GALLAGHER, Principal.

STRATFORD.

Fall Term Opens Sept 5th



STRATFORD, ONT.

Write to-day for our new catalogue. It's the finest business college catalogue in Canada, and represents the most progressive and best school.

W. J. ELLIOTT, Principal.

TORONTO.

**GROUND IN BUSINESS
PRINCIPLES and PRACTICE**

The foundation principles of business are taught pupils attending this College. The whole education is of a character that enables them to enter business life knowing how to take on its duties.

Enter now for a course in

**BOOK-KEEPING
STENOGRAPHY
OR
TYPEWRITING**

British American Business College

Y.M.C.A. Building, Cor. Yonge and McGill Streets

DAVID HOSKINS,TORONTO
Chartered Accountant, Principal.

druggists, to say nothing of the possible cost of insanity.

If a woman fills the office of wife, housekeeper, cook, chambermaid, wash-woman, scrub-woman, laundry-maid, milk-man, dairy-maid, poultry woman, mother, nurse, and plain sewer, she deserves to be sent to a lunatic asylum if she then wants to crowd in the work of carpet and rug manufacturing. Our grandmothers did very much hard work, and lived to be healthy, good-looking old women. They did not have so much house to keep in order, they wore plain clothes, took out-door exercise and had plain food, and went to bed early; and though their over-work did not injure them it left us a weaker generation.

The crying needs of the farm home are plainer foods, less scrubbing, less fancy work and home manufactures, more rest and recreation, and more conveniences.

A week off every year (or oftener) is the best tonic to be found. Not simply a tiresome afternoon's visit at the neighbor's, but an entire change of scene and thought. Even a few days at the large fairs will be helpful, and what can be had in connection is a peep inside the homes of the city people, and perhaps also the homes of our more fortunate farmers, just to see how other people have their houses arranged and how they do their work. During this vacation let us try to cultivate a good crop of discontent, not of the nagging, fretful kind, but the kind that will make us look for modes of improvement in our homes, and let us not be content until we can have every necessary convenience, for very little money will often provide great comfort if it is expended in connection with careful thought. Let us consider every step we take and every piece of work we do, and perhaps we can find how to make each very much easier.

Sherbrooke's Fair.

As a strictly Farmer's Fair, Canada's Greatest Exhibition has during the last few years taken up a prominent position in the front rank of the annual fall fairs of the Dominion.

The Eastern Townships Agricultural Association have pursued a policy of honest advertising throughout their entire history, have treated their every patron, both exhibitor and visitor, fairly and squarely, and have fulfilled their every engagement faithfully, and we fail to see how anything but success could result from such a business policy. Indeed, so long as this honest, open-handed treatment continues to be a characteristic of the Manager's efforts to please, we will not hesitate to vouch for an increasing plenitude of exhibits and an increasing multitude of visitors.

The prize-list this year has been added to in almost every department, both by the opening up of new classes and the increasing of money prizes. We are looking forward to this Fall's Fair, Sept. 4th to 9th, as a record-breaker, and can bespeak a good contingent of exhibitors from this province.

Prize-list, programmes and particulars can be obtained from H. R. Fraser, Manager.

Little Willie: Pa, why do they call them "minor" poets?" Papa: Because they ought to be working with pick and shovel, my son.

GET THE KIND THAT CURES
or your money goes back to you. There is nothing "as good" as
MITCHELL'S ANTI-LUMP JAW
because no other remedy on the market dare offer "money back if it fails," as we do. Our remedy is endorsed by the leading ranchers and shippers.
Send for Booklet about Lump Jaw
Price, \$2, postpaid
W. J. MITCHELL & CO.
CHEMISTS
WINN PE., MAN.

Patent Roller and Ball-Bearing Galvanized Steel
Wind Mills Towers and Flag Staffs
"Maple Leaf" Grain Grinders.
Iron and Spray Pumps.
Send for New Illustrated Catalogue.

SHAPLEY & MUIR CO. LIMITED
BRANTFORD CAN.

**Ask for
Eddy's**

when you order matches. Then you will be sure of having the best.

Their Horseless Carriage.

Dear Hans and Fritz decided that
To be right up-to-date
A horseless carriage they should have
To ride about in state.

They bought one of the latest style,
And started out one day,
With clanging bell and oily smell
That quickly cleared the way.
"I'll steer," said Fritz, "while you, dear
Hans,
Shall ring the bell to warn
Each deaf old gentleman, lest we,
Should ride on his pet corn."
They came unto a steep, steep hill,
And quickly down they flew,
But right before them was a sight
Which nearly scared them blue.

A monstrous bull stood in the road,
With red, expectant eye,
"Oh, dear!" cried Fritz. "Dear me!"
cried Hans,
"Oh, how shall we get by?"
The bull put down his head until
His two horns hit the ground,
And towards him sped the carriage with
A mighty bounce and bound.

And then occurred the strangest thing,
As though upon a track
The carriage wheels rolled up his horns
Onto the bull's broad back!

And down his stiff old tail they rode
Onto the ground once more.
The bull was so surprised that he
Could only stand and roar.

Just then they struck a sleeping dog,
Who had no time to wake
Before they flattened him right out
As flat as any cake.

"I'm sad to think we killed that pup!"
Cried Hans most tearfully;
But Fritz replied, "Just think instead
How glad the cats will be!"

Then came a great catastrophe—
In other words a smash,
The carriage ran into a wall,
And then, ker-plunk, ker-splash!
The two were sent a-flying o'er
The wall into a brook,
That soaked them through and through, and
then
How funny they did look!

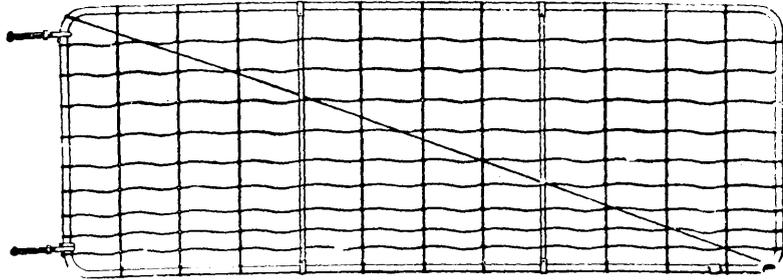
And how the little trout did squirm,
When Fritz said, with a grin,
"Dear fish, we thought you'd be at home,
And so we just dropped in."
—*St. Louis Star.*

Successful Advertising.

By Frank B. White.

To advertise successfully there are several things that should be taken into consideration, and the more essential are these: The careful preparation of advertisements, attractive, argumentative, forceful, truthful, and do not try to advertise others—advertise yourself, placing these advertisements in papers of worth—papers that go into the homes of the buying class—those most likely to be interested in what you have to say. There is the shotgun sort of advertising and there is the rifle-ball style. I recommend both, but it depends upon conditions as to when and where either or both should be used.

Your advertising in the newspaper will not be complete unless you follow it up with attractive and well prepared auxiliary advertising literature—neat circular, booklet or catalogue, and good stationery. When you receive



We extend a very cordial invitation to you to visit the exhibit of the Frost Fence and Gates at Toronto, London and Ottawa Exhibitions this Fall. A useful Souvenir given free.

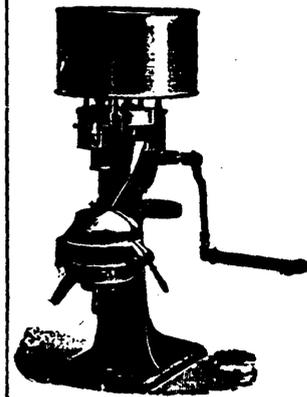
THE FROST WIRE FENCE CO., WELLAND, ONTARIO.
Manufacturers of High Grade, Coiled Spring Wire, Frost Fence, and the cheapest and best ALL STEEL GATE ever made.

**ALEXANDRA AND MÉLOTTE
CREAM
SEPARATORS**

Have beaten the "Alpha Laval" eight times and all other competitors in public working trials. Sent out on free trial and guaranteed to give perfect satisfaction. Come and see these machines working at the TORONTO EXPOSITION.

For full particulars apply to
R. A. LISTER & CO., Limited
579 & 581 St. Paul St. MONTREAL, QUE.

SENT ON FREE TRIAL



SATISFACTION GUARANTEED

FARMERS !

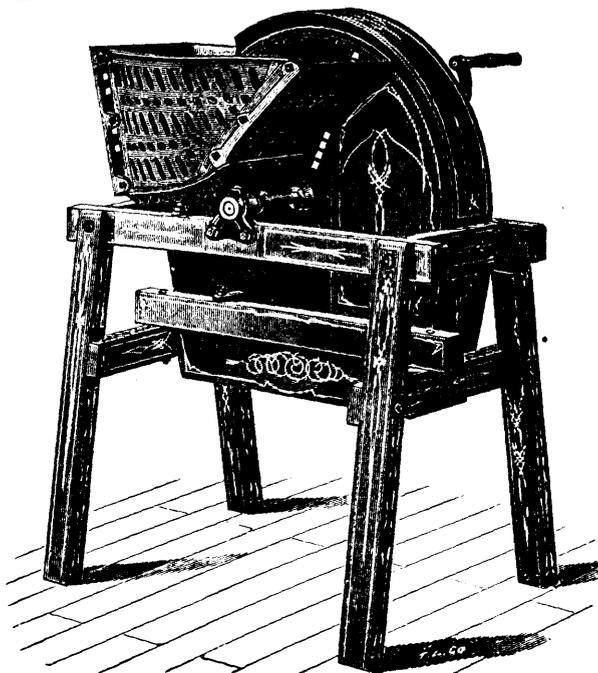
Test the use of

Lime as a Fertilizer

for yourselves, by using thirty bushels to an acre on your summer fallow as a top dressing. Harrow it in with the seed.
The increase in yield and improvement of quality is astonishing.

DON'T DELAY

BUY FROM THE NEAREST LIME MERCHANT.



New Root Cutter (Pulper and Slicer combined).

**THE
NOXON
CO.**

(LIMITED)

Ingersoll, Ont.

MANUFACTURERS OF

**HIGH - CLASS
FARM
IMPLEMENTS**

(For large descriptive cut see inside back cover page of this issue of FARMING.)

an inquiry in response to your advertisement it should become your positive duty to treat that inquiry just as you would a new friend. It may have cost you to receive that inquiry fifty cents or a dollar; it is worth your while to put as much more, if need be, with it to make the sale. I would treat that individual inquiry just as if there were no others and as though the success of my business depended upon making a sale to that particular individual. A careful following up of that new acquaintance may lead to a business friendship, profitable not only with him but with his friends and his friends' friends. Thus you see the cumulative or continued effect of good advertising. If you were to call at my office and state that you wanted to do some advertising, and I were to hand you out a cold, illy-gotten-up circular, and tell you to read it, and pay no further attention to you, you would think me a poor business man and your conclusion would be just, but no more so would I be than would you if you were to receive an inquiry and not give the careful attention to it that it deserves. I know that some of the large poultry breeders expend considerable money in newspaper advertising. Some of it pays; some of it does not pay. The mystery to me has been that it pays at all when I have investigated the methods employed in the handling of it.

Anecdotal.

Behold the fool saith, "Put not all thine eggs in the one basket," which is but a manner of saying, "Scatter your money and your attention." But the wise man saith, "Put all your eggs in one basket and—watch that basket."

James was always under the impression that he was a born humorist, and his friends never succeeded in convincing him to the contrary. But he has given up trying to be funny now; he says his humor was the means of losing a girl with a lot of money, and he has never got over the blow. He explains it this way: He was courting a broker's daughter. One day he called upon her, and she happened to be at home; he considered himself fortunate, as she had been out every time he had called for a week, and he determined to make the best of his opportunity and pop the question. He found her in a room busily engaged with small bundles of dried grasses which she had collected. "What a quantity of dried grass you have collected, Miss Ritchie," he said. Then his humor burst forth. "Nice room for a donkey to get into —" "Make yourself at home, Mr. James," she said, sweetly, before he could finish the joke. He went home, and all the humor was crushed out of him for ever.

A pilot on one of the Mississippi river boats, on being asked if he knew where all the shoals and rocks in the river were, replied: "Faith, I don't; but I know where they ain't."

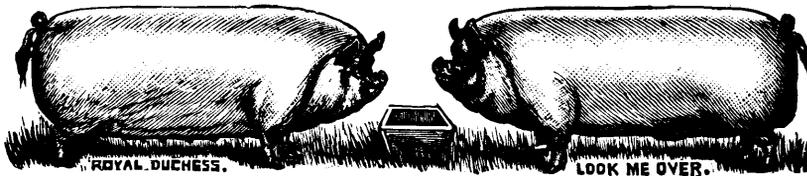
Wm. Butler & Son

Dereham Centre, Ont.

Importers and exporters of Pure-bred Live Stock. Breeders of Guernsey cattle, Chester White and Duroc Jersey Swine. Stock delivered free in carload lots to any part of Canada. Write for circulars, calendars, etc. tf



SUMMERHILL HERD OF YORKSHIRES

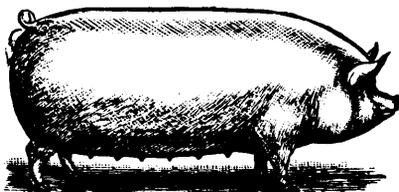


The Lengthy English Type

The largest herd of Imported and Canadian-bred Yorkshires of the large English type in Canada. 25 matured imported sows, among them being several royal winners. Six imported sows sired by Biddington Lad, Royal winner and gold medal boar for the best pig of the white breed. Have those imported stock boars bred by such breeders as Sanders Spencer and Philo L. Mills. 25 April pigs (imp.) of both sexes for sale. Also a number (imp.) in dam. 200 Canadian-bred pigs of all ages for sale. Write for prices. Personal inspection preferred. Prepay express charges and guarantee stock as described.

D. C. FLATT, Millgrove, Ont.

Oak Lodge Herd of Large Yorkshires



The Oldest Established and Largest Herd in America..

This herd has a uniform and fixed type, acknowledged by the best judges to be what the market demands.

It has made a record of its own in the show rings, winning more prizes at the largest Canadian and American shows than all other herds combined.

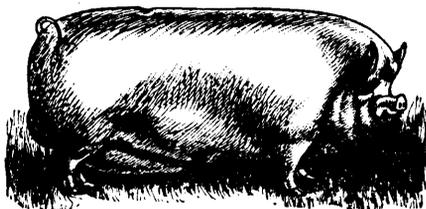
Parties wishing high class stock should examine this celebrated herd at the leading shows.

ALL STOCK FULLY GUARANTEED

J. E. BRETHOUR,

BURFORD, Brant Co., Ontario

Golden Link Herd of Berkshires



Are of the long bacon type. Intending purchasers would be well repaid to call and inspect my herd at Toronto. Have a grand lot of young pigs for sale. Three extra fine October sows, two good aged sows, and about forty head four and five month old boars and sows of bacon type.

Also first-class poultry of all the leading varieties. Prices right.

BRANTFORD, ONT.

T. A. COX

Food for the gods

Good Butter is a delight; the sweetest, purest Butter is made with

WINDSOR SALT

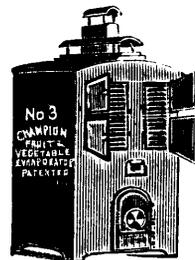
which makes a delight to the taste and enhances market price.

Ask for the celebrated

WINDSOR SALT

The Windsor Salt Co., Limited
Windsor, Ont.

CHAMPION FRUIT EVAPORATOR



Dries all kinds of Fruits and Vegetables, producing a superior quality of clean white fruit. It is made of Galvanized Iron, is fireproof and portable.

Also a Perfect Evaporator for use on the Kitchen Stove.

CATALOGUE FREE

THE G. H. GRIMM MFG CO.
87 Wellington Street, MONTREAL, Que.

Read our

PREMIUM OFFERS

on pages 5, 6 and 7

HORSE MARKET



We have the oldest established and most reliable Horse Market in Canada. Breeders and Dealers having first-class stock can obtain the highest possible price by consigning to us.

AUCTION SALES EVERY Tuesday and Friday at 11 o'clock

Private Sales every day. Special rates for carloads. Any class of horses will bring their full value. Write for terms to

WALTER HARLAND SMITH PROPRIETOR
GRAND'S REPOSITORY
 Toronto, Canada

N.B.—Largest Stock of New and Second-Hand Carriages and Horses in Canada.

LARGE AND UNRESERVED SALE OF 40 Registered Ayrshire Cattle 40
 BY AUCTION AT BROOK HILL FARM
 TROUT RIVER, HUNTINGDON CO., QUE.
 At 10 a.m. on Wednesday Oct. 31st, 1899.

Comprising one 4 year old bull, one 3 year old, two 2 year old bulls, 4 bull calves, 27 cows and heifers, in milk, and several two year old and yearling heifers. All Tuberculin Tested.

Terms, \$25 and under, cash; over \$25 ten months credit on furnishing approved joint notes; 4 per cent. discount for cash on amounts over \$25.

These must be sold without reserve, as the proprietor has given up a rented farm and is going out of the dairying business for a while.

The farm is situated 1 mile east of Carr's Crossing G.T.R. Ry., and 5 miles west of Huntingdon Village, N.Y.C. Ry.

Catalogue sent on application to undersigned.
W. F. STEPHEN, Proprietor, Trout River, Que.
A. PHILIPS, Auctioneer, Huntingdon, Que.

W. D. FLATT
 HAMILTON P.O. and TELEGRAPH OFFICE



OFFERS FOR SALE

- 7 Imported Scotch Bull
- 16 Canadian Bred Bulls.
- 21 Two-year-old Imported Scotch Heifers.
- 8 Yearling

Also a number of Young Cows, including both Imported and Canadian bred served by Golden Fame (imp). Prices consistent with quality. Correspondence and inspection invited.

SEED WHEAT FOR SALE

	Per bush.
Early Arcadian.....	\$1.10
Diamond Grit.....	1.25
Jones' Longberry.....	1.30

Supply Limited

Choice Timothy \$2.00
 Bags 15c. extra.

Samples sent on application.
 Address

J. E. RICHARDSON,
 Seed Merchant, Princeton, Ontario.

Thorncliffe Stock Farm

Thoroughbred Clydesdale and Roadster HORSES
 Jersey and Ayrshire CATTLE

FOR SALE

CLYDESDALE HORSES, JERSEYS and AYRSHIRE COWS from the finest milking families. Also **15 AYRSHIRE BULLS** and **2 JERSEY BULLS** from tested cows.

ROBT. DAVIES, PROP., TORONTO, CANADA

W. C. EDWARDS & CO. Breeders and Importers

PINE GROVE STOCK FARM, Rockland, Ont.

On the C.P.R. and G.T.R. Railways. Special bargains on young bulls superior merit and select Scotch breeding. Also thick young heifers at the right prices.

Ayrshires, Jerseys, Shropshire Sheep, and Clydesdale Horses.

Post Office, Telegraph Office, and Steamboat Landing, Rockland, Ont., on the C.P.R.

J. W. BARNET, Manager

LAURENTIAN STOCK and DAIRY FARM, North Nation Mills, Que.

Ayrshires, imported and homebred herd headed by Imported **Tam Glen 2nd**, No. 1310 D. A. H. B. Jerseys all of the celebrated St. Lambert family; herd headed by **Liegar Fogis of St. Anne's** 25704 A.J.C.C. Berkshire Pigs. Young stock of all the above breeds for sale.

Post Office, Telegraph Office, and Railway Station, North Nation Mills, P.Q., on the C.P.R.

A. E. SCHRYER, Manager



Dentonia Park Farm

EAST TORONTO (Coleman P. O.)

W. E. H. Massey, Proprietor

Address **DENTONIA PARK FARM, Coleman, Ont., Canada**

Dentonia Jersey Herd

Two handsome young bulls for sale, fit for service; one out of imported stock and one a splendid type of the St. Lambert family. Prices and particulars on application.

Dentonia Poultry Yards

Poultry department in charge of Frank R. Webber, formerly of Guelph. Handsome Pens of White and Brown S.C. Leghorns, Barred P. Rocks, Black Javas, White Langshans, Pekin Ducks. Eggs in season, 15 for \$2, or 30 for \$3.50. Stock for sale. Also Embden Geese or Turkeys.

Dentonia Trout Ponds

This year's fry in fine healthy condition ready for delivery, also yearlings. Market Trout supplied to the trade.



ASK FOR ROBERTSON'S PAINTS

Which are by every test the best.

Greatest Covering Power
 Most Durable

Most Economical

THE JAMES ROBERTSON CO., Limited
 TORONTO

Agricultural College

The Ontario Agricultural College will reopen on September 26, 1899

Full courses of Lectures, with practical instruction in Agriculture, Live Stock, Dairying, Poultry, Beekeeping, Horticulture, Veterinary Science, Chemistry, Geology, Botany, Entomology, Bacteriology, English, Mathematics, Bookkeeping, and Political Economy. Year shortened to suit farmers' sons.

Send for circular, giving terms of admission, course of study, etc.

JAMES MILLS, M.A., President,
 QUELPH, ONTARIO

Editor of the Canadian Bee Journal Retires to Engage in Gospel Work.

A bee-keeper of repute not only in Canada but throughout America and even Europe, has recently decided to give up bee-keeping and go into the Gospel work entirely.

R. F. Holtermann, Brantford, Canada, and late editor of the *Canadian Bee Journal*, will no longer be found taking an active part in the advancement of bee-keeping. He writes that he is prepared to take up special Gospel meetings anywhere, and especially in the agricultural districts. It is his intention to use plant and animal life on the farm in preaching.

It may be said that the late Sir J. M. Dawson, LL.D., F.R.S., F.G.S., Principal and Vice-chancellor of McGill University, made the statement that "Many lectures would be required to illustrate the multitude of ways in which, with inimitable truth and beauty, the animal kingdom is made to teach us of spiritual things, and to illustrate the character of its maker."

Mr. Holtermann has just completed a little work showing that the natural history of the bee is a complete illustration of the Gospel and the life of believer in God. He says it is the most complete illustration of all animal life and the truths seen are beautiful. Single copies of the work can be secured, postpaid, at his address, Brantford, for 10c., or 12 copies for \$1.00.



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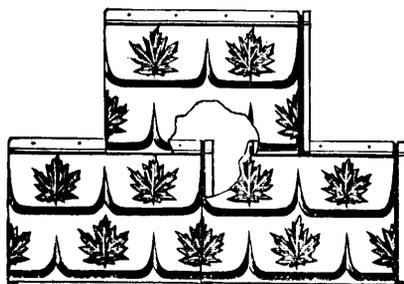
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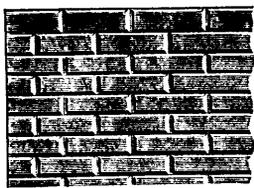
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are constructed with locks on all four sides, leaving no ends to stick up and admit the weather. We guarantee them to be absolutely weather-proof.

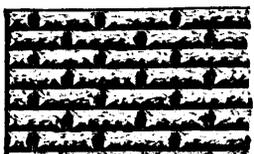
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It is the best.

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It is not a scorcher but a steamer.

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Stock Notes.

RICHARD GIBSON, Delaware, Ont., writes: I may assure you that the shearing rams I am offering in this issue are capital specimens, weighing over 200 lbs. and full of quality. I never had as good a lot. Trade is good. Just sold twenty-four ewes and a ram to a party in Missouri; have twenty left that will make money for whoever is lucky enough to get them. Am not offering ewe lambs.

LARGE YORKSHIRES.—J. E. Brethour, Burford, Ont., writes: The Oak Lodge herd of large Yorkshires is in good condition this season, and sales have been very numerous.

I have never bred a better class of hogs than this season's crop of young pigs. My customers who have purchased from me on order have written me very flattering letters in praise of the quality of stock supplied.

The boars, which I personally selected and imported from England last year, have more than fulfilled my expectations upon being mated with sows of Oak Lodge breeding. From the class of pigs I am now breeding larger litters are now being produced and of a uniform type, having lighter heads and shoulders with longer and deeper bodies. It is owing to the importation by some breeders of the short, pug nosed type that the Yorkshires, as a breed, have been condemned by some pig breeders.

I am pleased to say that breeders are beginning to find out that this type are not good representatives of the breed, and as a result the large Yorkshires are being sought after more than any other breed in Canada.

I will make a large exhibit of representatives from my herd at the leading exhibitions this fall, and I cordially invite inspection from parties interested in the production of high-class bacon hogs.

Recent Sales Made by W. D. Flatt, Hamilton, Ont.

To William Boyce, Palgrave, Ont., Flamboro, a red yearling bull of good quality.

To J. Fletcher, Gibraltar, Ont., a young bull which should prove very profitable as a

sire in a dairy herd, he being well bred on milking lines.

To Messrs. Geo. Harding & Son, Waukesha, Wis., three heifers and one cow. Lintie (imp.) a two-year-old heifer, she is a really good one, possessing good Shorthorn character, has a well-sprung rib, is lengthy, level and straight in her lines; Mina Auguston 5th (imp.) is a very stylish heifer, and capitally bred; Genevieve, a red two-year-old heifer, good enough for the show ring; she is of the favorite Ury family, sire Prime Minister (imp.), bred by Mr. Wm. Duthie, and successfully exhibited at Toronto; Rosy Nell, a five-year-old cow, she is a beautiful, blocky, short-legged, heavily-fleshed, good one, being very deep and wide. Messrs. Harding are the foremost dealers and breeders of sheep in the United States to-day, and if they continue to purchase the class of Shorthorns that they have recently been selecting in Ontario, it should not be long until they should possess a like standing in Shorthorns.

To N. P. Clark, St. Cloud, Minn., fourteen head. Daisy of Strathallan 15th, a smooth, strong heifer of fine quality, the highest priced cow in U.S., was of this favorite family, this heifer also topped the sale when Mr. C. M. Simmons dispersed with his herd, her sire Royal Saxon was awarded 1st prize, Toronto Industrial Exhibition 1894, Doctor Strathallan 3rd won 1st prize, and was sweepstakes bull at Toronto, he was sold for \$1,500 to go to Iowa, Rose of Strathallan (Imp.) was a prize winner at Highland Society Show, her sire Allan won 1st prize at same show, and his sire Forth won 1st prize at the Royal Show at Newcastle; Crimson Jewel 2nd, is a large, lengthy, smooth cow, with strong loin, and fine quality, she is choicely bred, and a good milker, is the dam of Crimson Knight, sold by Mr. Flatt to Premier Greenway, of Manitoba, he was awarded 1st prize at Winnipeg Industrial Exhibition 1898, and headed the 1st prize young herd at same show; Ivy Leaf is a massive cow, and very attractive; she was awarded 1st prize at London and 2nd prize at Toronto; she is also proving to be an exceptionally good breeder; Dorothea is a prime young cow of excellent character, and heavily fleshed;

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HERE IT IS.

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Rheumatism, Neuralgia,
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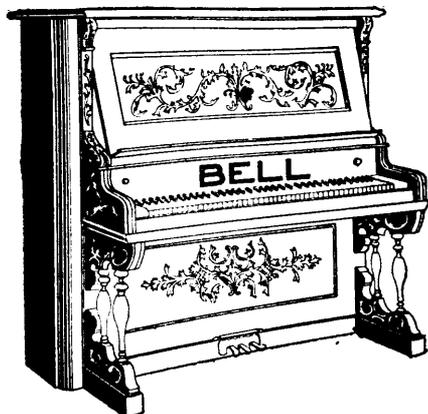
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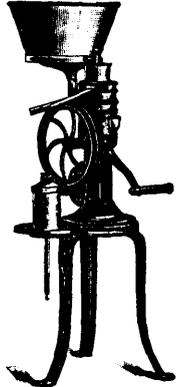
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Trout Creek Beauty is a promising heifer; Floretta 3rd (Imp.), is a large, low set, deep bodied, thick-fleshed cow, and a good milker, and if fitted would give trouble to many in a show ring; Fashion Fair is an even fleshed, excellently formed and good doing young cow; she is proving to be a profitable breeder, and good milker; Mary Minto is good enough to go in the best of company, there are very few indeed just like her in Ontario; Queen Ann is a show cow, smooth, well proportioned, with grandly sprung ribs, strong level back, her sire Aberdeen (imp.) was a prize winner at Toronto, and sold for a high price to go to Illinois; Scotsman 2nd is an extra good bull of fine character and good disposition, he is the sire of many good things, and is by Scotsman, who was sired by the famous Barmpton Hero, grandsire Methlick Hero (imp.)—2723—bred by Wm. Duthie, Collynie, Scotland; his dam Mademoiselle was that very fine cow imported by the Experimental Farm at a cost of \$1,000, won first at the Royal Northern and Ythanside Shows, both as a yearling and two-year-old, his granddam Missie 47th won first and Challenge Cup as best cow of any bred at the Ythanside Show in 1878 in a large class, his sire Cayhurst, bred by A. Cruickshank, Sittytton, was never shown without success, got by Roan Gauntlet—35284—dam the very fine cow Cochineal, great grandsire Earl of Derby 2nd, was one of the most noted prize winners of his day; Scotsman 2nd is full brother to Missie of Neidpath 20th, recently purchased by Messrs. Geo. Harding & Son, Waukesha, Wis.; she, without doubt, ranks among the choicest, the Missies are the oldest of one of the most highly esteemed tribes at Upper Mill, and have produced many valuable sires and prizewinners, among which are Mountaineer, Miranda and Marengo, first prize at Bath and West of England Show, and 1st prize and championship winner at the Royal Show, Birmingham, 1898, the highest priced bull at the Scotch sales, 1898, was of the same family, being Mr. Marr's calf, which realized \$1,650; Blossom, a two-year-old heifer, with strong individual merit; Columbia 4th, two-year-old, a typical Shorthorn, symmetrical, straight and deep fleshed, her breeding is superb; Verbena's Flower is a strong well built cow, of excellent quality, and has been pronounced one of the choicest

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Style No. 1.
Capacity—330 to
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Price, \$75.00.

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A wise investment that progressive farmers are buying as they buy other useful machinery. The National will yield from 1/2 to 1 1/4 lbs. of butter per week per cow more than is being done by the old laborious wasteful methods of skimming milk. One pound of butter per week from one cow for 9 months, at 15c. per lb., will pay 8 per cent. interest on the cost price of the National. Easy to run by boys 8 to 12 years old. Easy to clean. Simple to operate. The neatest in style and finish. A perfect skimmer. Guaranteed as represented, and a trial for one week given to intending buyers. If not satisfactory, may be returned to us at our expense. No risk. Sold on their merits. Send for testimonials and Catalogue.

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It's foolish boasting for any firm to say that their machines are the only practical pneumatic cutters on the market.

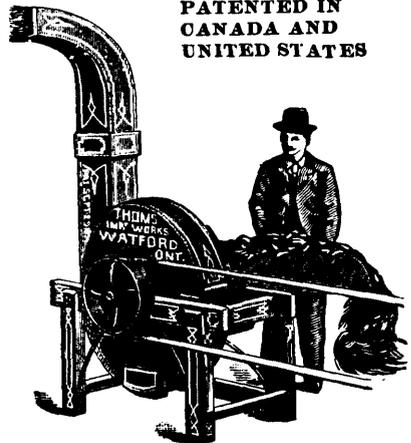
We are the originators and the patentees, and the only safeguard against being humbugged is to see that the machine you purchase is marked "Thom's Patent."

Every honest manufacturer in Canada knows that we are the leaders and that our machines represent all that is latest and best.

We guarantee to fill any silo in Canada, we care not what the height may be, at the rate of 8 to 12 tons per hour.

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BEFORE turning your horses out for the winter, horsemen should apply it to remove Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Windpuffs, all Skin Diseases or Parasites, Thrush, Diphtheria, Pink Eye, all lameness from Spavin, Ringbone and other Bony Tumors. Also, all obstructions in circulation, and imparts new life and vigor. It is a peerless remedy for all Throat and Bronchial Troubles. NOT ONLY SEE WHAT OTHERS SAY OF IT, BUT SATISFY YOURSELF BY TRYING IT.

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CORNHILL, Tex.
Please send me six bottles Gombault's Caustic Balsam by express. Your Balsam is the best liniment I have ever used, both for horses and myself. I have used it on myself for rheumatism with good success. I doctored 4 months and spent \$120 for doctor and medicine with no results, but since using your Balsam I can work around on the farm. Would like the agency for this country.
OTTO BRYER.

SATISFACTORY RESULTS

WIER, GA.
I have used Gombault's Caustic Balsam for spavin, bone and blood, and wind galls, and laminitis, with entire satisfaction as to results; have not failed to make a perfect cure. I have recommended it to all my neighbors. I have taken some warts off my neighbor's horse. It is all you recommended it, and more.
W. F. SUMMERCOUR.

"IT NEVER FAILED TO CURE"

WALCOTT, IND.
I see you are still handling the Gombault Caustic Balsam. I wish to say right now and here, that it is far the best liniment I ever used, and I have in years past used a good deal. I would rather have one bottle of it than a barrel of any other kind I ever used. It never failed to cure for me.
CHAS. E. ROSS.

CURES IF PROPERLY USED

HOUSEVILLE, N.Y.
Enclosed please find \$1.50 for a bottle of Gombault's Caustic Balsam. Send by express to Glendale, N.Y. It is an exceedingly good medicine. I cured a very bad spavin with it. If it doesn't take off any bunch from a horse it is because it is not used properly.
GEO. GRAINGER.

DOES MORE THAN CLAIMED

WALCOTT, IND.
The bottle of Gombault's Caustic Balsam just received for which accept thanks. Yes, you have my consent to publish my letter to you in regard to the merits of the Balsam. It is all and more than you claim for it. I have no ax to grind in speaking so highly of it. I have used it many times and know whereof I speak. It is a grand medicine.
CHAS. E. ROSS.

BEATS ALL LINIMENT

ALBERT, PA.
Please send me six bottles Gombault's Caustic Balsam. Ship to Fairview, Pa. Will send money on receipt of same. Parties whom I have sold Caustic Balsam to say that it beats all liniments they ever used.
GEO. SMITH.

DOES ITS WORK EVERY TIME

WILMINGTON, DEL.
I found out the virtue of the Balsam and have used two bottles. I think it one of the finest remedies one can keep around a stable. It is always ready for use, and I believe if properly applied and rubbed in, will do its work every time. I have used different kinds of liniments, but this does its work quicker than anything I have ever used, and after all leaves no scar, and the hair grows in same as ever. You can use my name whenever you see fit.
H. C. PARRISH.

GOOD FOR ENLARGED TENDONS

St. JOHNS, N.B.
The bottle of Gombault's Caustic Balsam you so kindly sent me in November, 1896, I have used on my horse for enlarged tendon, and found it to work to my entire satisfaction, and would recommend it to all horsemen instead of using the firing irons, as it has even a better result.
R. O'SHAUGHNESSY.

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I have handled Gombault's Caustic Balsam for about 15 years, and, of course, in that time have sold hundreds of dollars worth with pleasant satisfaction to myself and great pleasure to my patrons. It is a delight quite seldom experienced by present time druggists to have a remedy that can be honestly recommended with no fear of having more in future sales than is gained by the profit in push sale talk. With little or no advertising, Gombault's Balsam has had an ever-increasing sale because of neighborhood introduction and my present effort of pushing a good thing along.
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We have used Gombault's Caustic Balsam for years and in all cases where severe blister was necessary, with success. We have removed curbs, bunches caused by kicks, and strained tendons by repeated applications of your remedy and have never had a failure, when used according to directions.
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GREENVILLE, O.
I have used a great deal of your Balsam this summer—11 bottles—and it has proved to be a success in every thing I have tried to cure. I cured one horse of fistula and poll evil. The horse was a solid scab all over and I cured him sound and well. He is four years old and is handsome now; did not leave a scar.
C. A. WILLIAMS.

NEVER BE WITHOUT IT

WEST END, VA.
I am very much pleased with Gombault's Caustic Balsam and never expect to be without it again. It is all you claim for it.
ROBERT NURSE.

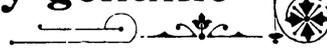
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TORONTO, ONT., and CLEVELAND, OHIO

SOLE AGENTS FOR THE UNITED STATES AND CANADA

Gombault's CAUSTIC BALSAM

is the only genuine



cows in my herd, her breeding is right; Laurier, a red bull calf, he is as good as his name, more than this cannot be said, his sire Prime Minister (imp.) was bred by Mr. Wm. Duthie, and was successfully exhibited at Toronto Industrial Exhibition. Mr. Clark writes since he returned to Minnesota to say all his stock were looking well. Joly Jilt, a heifer which he purchased from me last year, has a bull calf at foot, which he considers a sure winner. Mr. Clark is no exception to the American gentlemen, who come over here to purchase stock, in fact, he is very much set on having the best things going. The bunch of cattle described will do credit to any herd in America, and it is a pleasure to know that they are going in good company, as Mr. Clark has a lot of very choice things in his herd at the present time.

To C. Hintz, Fremont, Ohio, Ruby Hill 4th, a two-year-old heifer. This heifer was good enough for Toronto Industrial Exhibition. She is beautifully bred, and has descended from a host of prize winners. Mr. Hintz intends exhibiting her at a number of the State fairs.

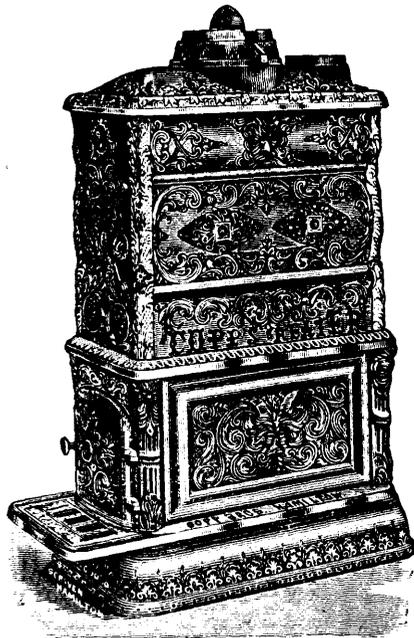
To Wm. Conley, purchaser for Mr. A. Chrystal, of Marshall, Mich., Lady Pride, a three year old imported heifer, she is richly bred, have some of the best Cruickshank blood; Trout Creek Wanderer (imp. in dam), a bull calf of good promise, sired by My Lord, a bull bred by Mr. Duthie, and out of the famous Upper Mill Missie family; Nonpareil 51st, a low set well proportioned cow, of modern type, and comes of one of the best of the Cruickshank families, Stanley, her sire, was a champion winner at Toronto Exhibition, and sire of Lord Stanley, a sweepstakes winner at the World's Fair, Chicago; Empress 4th is a large cow, and an extra good milker, her sire, Nobleman, was got by the (imp.) Kinellar herd bull, Tofthills, and out of Isabella 14th, of the great Centennial Exhibition prize winning family. Mr. Chrystal certainly cannot go astray in securing this class of Shorthorns, and these four will greatly assist in bringing his already strong herd to the front.

Publishers' Desk.

We would call the attention of our readers to the special bargains the People's Supply Co. are advertising in this issue of FARMING. It will certainly pay any farmer to read this list carefully and to call and see the goods when in the city. If you are not coming to the city order by mail at once, as the goods cannot remain long at these prices. From our acquaintance with Mr. Manning we would say you will find the goods just as represented.

FARMERS.—Have you seen the new Ontario Sulky Plow, manufactured at Smith's Falls, Ont., by the Perin Plow Co., Limited? Be on the look out for it at the Toronto and Ottawa fairs, it is quite a novelty and a great success. One special feature in which it excels all other sulky plows is its lightness of draft and simplicity in working. Any active boy who can handle a team can do good work with this favorite plow. Be sure and look it up at the fair.

We desire to call the attention of our readers to the advertisement of the Estate of John Battle, manufacturers of the celebrated Thorold Hydraulic Cement, which will be found in another column. This firm have been most successful with the many structures in which their cement has been used. A unique method of advertising their goods has been found in the construction, on the Exhibition Grounds, Toronto, of a "miniature" barn, basement, walls and floor, all of which are built with Thorold cement. To all who visit the Exhibition a hearty invitation is extended to call and inspect the "new barn." This structure will prove especially interesting to the farmers, who during the last year or two have evinced quite an interest in the possibilities of cement for farm building purposes. A representative of the firm will be present who will cheerfully give any information required as regards the use of cement for building purposes.



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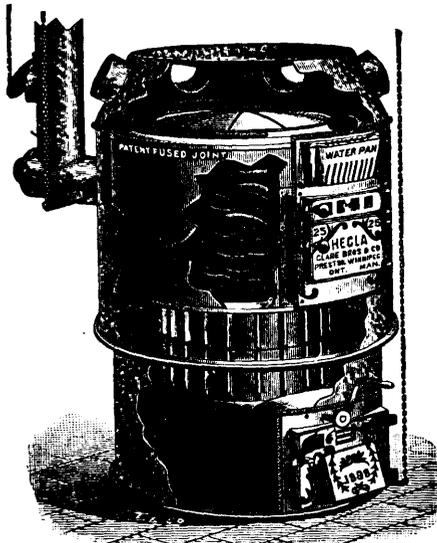
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in which we have incorporated all the latest improvements in Furnace construction. The Dome and Radiator are combined and constructed with our Patent Fused Joint, making it absolutely gas-tight. It is fitted with a large double-feed door, making it suitable for large, rough wood. The fire-pot is in two pieces, with a flanged extended surface, which keeps it from warping or burning out. The Hecla works perfectly with any kind of Fuel; hard coal, wood and soft coal, for which we provide a Hot Blast attachment which ensures perfect combustion. Send a rough sketch of the building you want heated and we will give you estimates and advice.

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MAN.

CLARE BROS. & CO.

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Makers of these articles, in many instances, do not pay the necessary attention to the quality of the salt they use. Some people think that "salt is salt," and it does not matter where it comes from or who makes it. This is a great mistake, for it is essential that to produce the best Butter or Cheese nothing but the purest salt should be used.

The number of prizes obtained by users of

"RICE'S" or "COLEMAN'S" DAIRY SALT

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Sussex, New Brunswick

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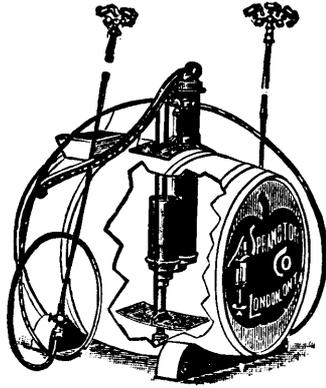
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is kept in advance of the users. See the Exhibit at the

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Professor H. L. Hutt, one of the judges of the GREAT SPRAYING CONTEST, speaks after three years' use.

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Presented—
JAMES MILLS, M.A., L.L.D.
Horticulturist—
H. L. HUTT, B.S.A.

ONTARIO AGRICULTURAL COLLEGE,
Horticultural Department,
Guelph, Ontario, August 24, 1899.

THE SPRAMOTOR CO., London, Ontario.

Dear Sirs—I can with pleasure say a good word in behalf of your Spramotor outfits. I have noted with interest the improvements made in them from time to time, and I think you deserve credit for the enterprise you have shown in making them strictly first-class.

We are using both your large and small sized outfits, and they are giving excellent satisfaction. Your latest improvements, the Spramotor Jr.'s Nos. 1 and 2, are all that could be desired, and I can heartily recommend them to all who have spraying to do.

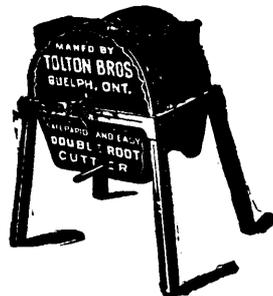
Yours truly,
H. L. HUTT.

Send for 76 page catalogue and treatise on the diseases affecting fruit trees, vegetables, etc., and their remedies

SPRAMOTOR CO.,
68-70 King Street, London, Ontario

TOLTON'S No. 1 Double Root Cutter

Points of Merit



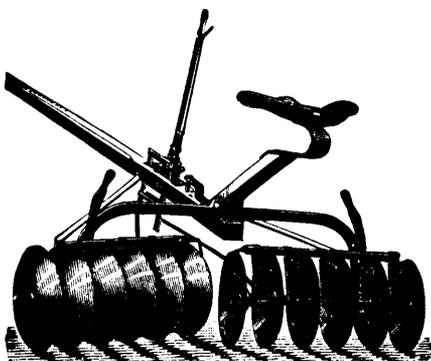
1. To change from pulping to slicing is but the work of a moment.
2. There are two separate wheels, one for pulping and the other for slicing.
3. The united force of both wheels is always used in doing the work in either capacity.
4. The hopper is between the wheels, and does not choke.

The Only Double Root Cutter Manufactured

Fitted with **Roller Bearings, Steel Shafting** and all that is latest and best in principle, material and construction.

Do Not Fail to See our Exhibit at the Toronto Fair

TOLTON BROS., = = Guelph



The Bissell-PreScott Disc Harrow

Is especially adapted for Summer-fallow cultivation, preparing seed bed for wheat, working stubble fields after harvest.

Successfully works hard ground where other Harrows fail.

The Leading Disc Harrow

T. E. BISSELL, - FERGUS, ONT.

Exhibited at Toronto, London, Ottawa Fairs, etc.

Toronto's Great Exposition

BOTH ENTRIES AND ATTRACTIONS TO BE AHEAD OF ANY PREVIOUS YEAR.

On Tuesday, the 29th inst., there opened at Toronto the greatest annual exposition and industrial fair, not only that Canada, but that America knows. Periodical fairs, like the World's Fair, of course, run ahead of that at Toronto; but there is no exposition or fair in the world that is held annually that covers a greater scope, attracts more people or furnishes more instruction and entertainment than the one that will be held in the capital of Ontario from the 28th inst. to September 9th. And a prime virtue of Toronto Exposition is that the management insist that prices shall be moderate for everything, including the admission at the gate and to the stand. Last year three hundred thousand people paid for admission to Canada's great exhibition, a fact that has induced the directors to make increased efforts to please the crowds. Not only has the amount to be distributed in prizes been raised to upwards of \$35,000, but more money will be paid for attractions, both amusing and instructive, the latter including wireless telegraphy, wireless telephoning, improved X-Ray experiments, effect of gun-cotton explosions in deep water, conducted by Royal Engineers, life-saving from shipwrecked vessels, fire drills by professional firemen, mining machinery in operation, latest electrical developments, butter-making competitions, different processes of manufacture, mechanical inventions, etc. The entries of live stock in every branch—horses, cattle, sheep, swine and poultry—are in excess of all other years. In short, there is not a department in which Toronto Exhibition will not this year run ahead of the record. The dogs will number 800 as against 700 last year, and will include the rarest and best bred canines in the world. The exhibition of art will be exceptionally good. In fact, the growth and development of the country will find ample demonstration and illustration in every direction, while, with a grand dual military spectacle, representing the battles of Iloilo and Omdurman, the musical ride of the Dragoons, beautiful fireworks effects, performances by an army of the cleverest entertainers money can secure, novelties on every hand, great mineral, vegetable and floral displays, trotting, pacing, running and hurdling races and bicycle contests, everything possible will be covered and more entertainment provided than can be absorbed in a single day. Not alone have the Canadian railways made important reductions in rates for Toronto Exhibition, but every road in the United States with Canadian connections has done the same.

STILL IN THE VAN

SEED WHEATS

Pearce's Paramount

Gold Coin

Diamond Grit

Early Arcadian

AND ALL THE LEADING VARIETIES

CATALOGUE Now Ready—Send for One.

Also, our 72-page POULTRY CATALOGUE—Ready to Mail Sept. 1st.
BULB CATALOGUE Now Ready.

JOHN S. PEARCE & CO. - LONDON, ONT.

Increase your business
by advertising in FARMING

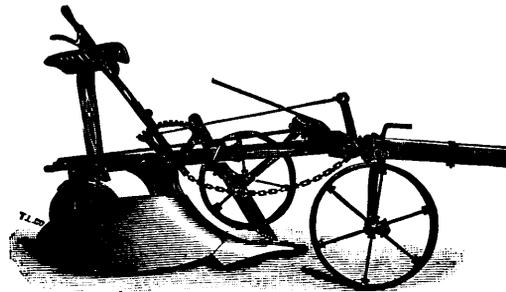
BEST SULKY PLOW

IN THE MARKET

The Lightest
in Weight.

The Simplest
in Working.

The Easiest
in Adjustment.



The Lightest
in Draft.

The Strongest
in
Construction.

The Highest
in Quality.

THE LOWEST IN PRICE

Adjustments for any ground or any depth made by one lever. Fitted with the only perfect Tilting Coulter and Stubble Cleaner. A Plow without an Equal.
Send for Circulars and Price List.

The Perrin Plow Co.

LIMITED

Smith's Falls, Ontario

Land for Everybody

Free Grants of Government Lands

Cheap Railway Lands for Sale on Easy Terms

GOOD SOIL

PURE WATER

AMPLE FUEL

MOST desirable lands suitable for mixed farming can be obtained in the old district along the line of the Calgary and Edmonton Railway, about fifty miles north of Calgary. Most desirable land can be obtained in Southern Alberta in close proximity to the Calgary and Edmonton Railway and the Crow's Nest Pass Railway, suitable for mixed farming and ranching on both a large and small scale. North Saskatchewan also affords a splendid opening for intending settlers in the Prince Albert, Duck Lake and Rosthern Districts, on the line of the Qu'Appelle, Long Lake and Saskatchewan Railway.

For full information concerning these districts, maps, pamphlets, etc., apply to

OSLER, HAMMOND & NANTON,

Land Office, 381 Main Street, WINNIPEG

There Are Three Important Manures



FARMYARD MANURE

Thomas-Phosphate Powder

AND CLOVER

THOMAS-PHOSPHATE supplies the balance to farmyard manure, and gives Clover the power required to assimilate larger amounts of Atmospheric Nitrogen.

Thomas-Phosphate renews worn out land, makes seemingly sterile lands productive, and provides that "something wanting" which has so long puzzled farmers.

77 bushels of wheat per acre have been obtained by manuring with Thomas-Phosphate

8 tons of cured clover hay per acre have been obtained by the use of Thomas-Phosphate.

Top-dress your grain fields and meadows with Thomas-Phosphate, and you will reap a benefit for the following four years, but do it **NOW**.

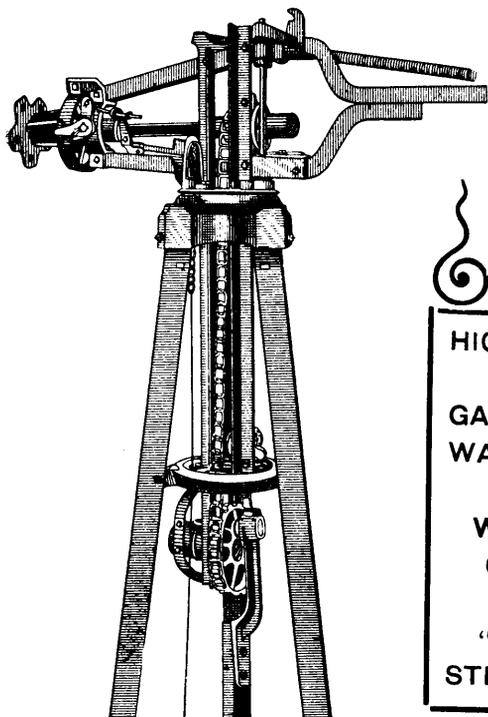
The Thomas-Phosphate Company

Board of Trade, Toronto

The Celebrated BRANTFORD GALVANIZED STEEL WIND MILLS

STEEL KING PUMPING MILL

Made in 8, 10, 12, 14 and 16 ft. sizes.

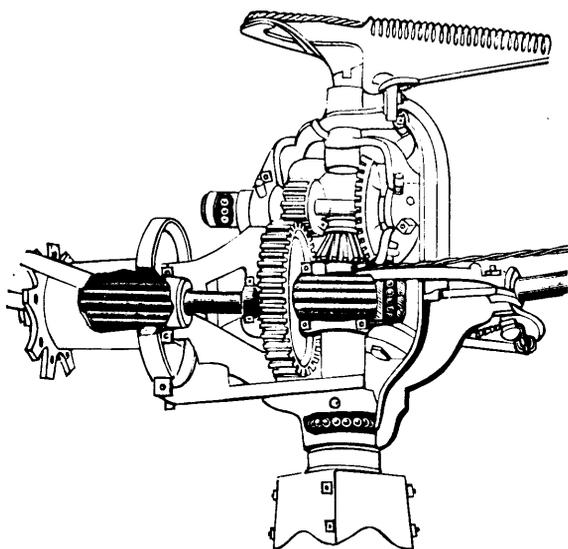


View of engine of "Steel King" Pumping Wind Mill, with patent Roller and Ball Bearings, Angle-Steel Frame, Sprocket Drive, Band Brake, etc.

Life is too short for you to pump water by hand.

"IDEAL" POWER WIND MILL

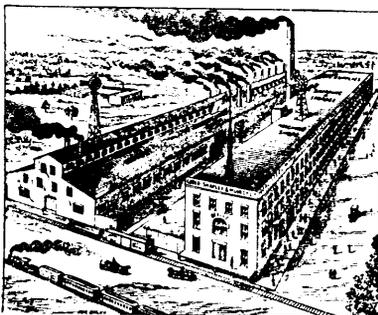
Made in 12, 13, 14, 15 and 16 ft. sizes.



Engine of "Ideal" Power Wind Pump, with Roller and Ball Bearings.

Will grind Grain, cut Feed, saw Wood, pump Water, run Lathe, etc.

THE LARGEST WIND MILL FACTORY IN CANADA "IDEAL" LIFT PUMP



OUR NEW FACTORY-LARGE AND WELL EQUIPPED

HIGH GRADE IRON PUMPS
 SPRAY PUMPS
 GALVANIZED AND PLAIN
 WATER PIPE and FITTINGS
 BRASS CYLINDERS
 WOOD TANKS, all sizes
 GALVANIZED STEEL
 TOWERS, all kinds
 "IDEAL" GALVANIZED
 STEEL FLAG STAFFS, Etc.

We manufacture 7 styles of the latest improved quartered pine Wood Pumps.

Our pump plant is the most complete and up-to-date in America.

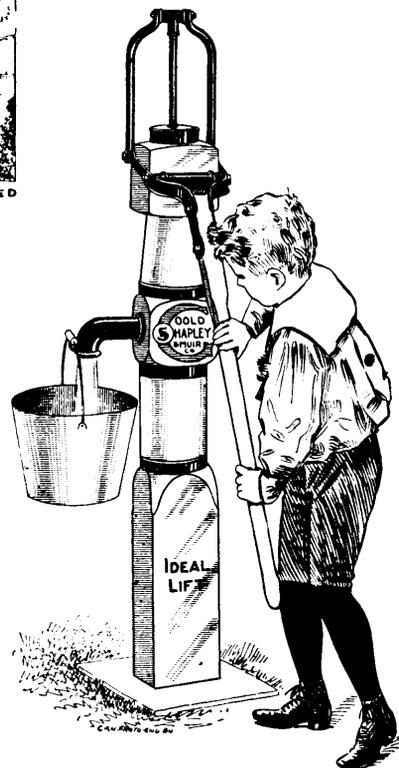


Fig. 4x—"Ideal" Lift Pump.

This pump we consider the best on the market. It is fitted with wood handle with malleable ends, all wearing parts being iron and steel. For deep wells we fit this pump with iron or galvanized iron tubing and iron or brass cylinders, which makes it one of the easiest working pumps on the market, and also the most durable.

ASK FOR OUR PUMP CATALOGUE.

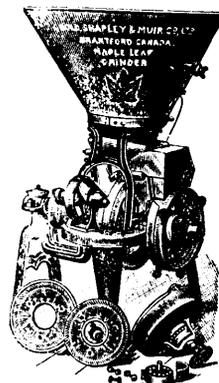
THE FAMOUS MAPLE LEAF GRAIN GRINDER

Made in two sizes.

No. 1 Senior has 10-in. Reversible Burrs.

No. 2 Junior has 8-in. Single Burrs.

Both Grinders have relief springs, ball bearing plates, shake feed, and grind fine and fast. Send for circulars and mention this paper.



GOOLD, SNAPLEY & MUIR CO. LIMITED

BRANTFORD, CANADA

ALSO MANUFACTURERS OF BEE KEEPERS' SUPPLIES AND PUBLISHERS OF THE CANADIAN BEE JOURNAL.

Market Review and Forecast

Office of FARMING,
Confederation Life Building,
Toronto, Sept. 1st, 1899.

General business continues good and a big fall's trade is looked for. The stock markets in some places have shown an easier tendency during the week, but mining stocks continue active at Toronto and elsewhere. The war talk is having some effect upon financial circles in Europe.

Wheat.

The wheat markets this week are a little more bearish than a week ago and reports regarding the crops are having their influence upon the market. While there seems to be a likelihood of abundance in sight, yet statisticians are suggesting that the European requirements will call for all that can be spared from this side of the Atlantic, and are of the opinion that higher prices will prevail. The yield of winter wheat in the United States is put down at 275,000,000 bushels and the spring crop at 250,000,000 bushels, making a total of 525,000,000. There are various estimates as to the Manitoba crop, but it will at any rate be much larger than last year, so that if the fall wheat crop in Ontario is a partial failure the shortage will be more than made up by the extra Manitoba yield.

The markets are easier in keeping with the break in Chicago. Manitoba is easier at Montreal and the market here is lower. Ontario red and white is quoted at 68 to 70c. north and west, and goose at 67c. north and west. On the Toronto farmers' market red and white brings 68 to 70c.; spring fife 66c., and goose 70½ to 71½c. per bushel.

Oats and Barley.

The old stock of oats at Montreal is reported to be low, and buyers are bidding 29c. afloat for the new crop. There is a fair enquiry here for oats; old white north and west bring 26 to 27c. and exporters are offering 24 to 25c. for new oats north and west. On the farmers' market they bring 26 to 27c. per bushel.

There is some demand for feed barley, which is quoted here at 31 to 32c. north and west.

Peas and Corn.

A large export demand for Canadian peas is reported at Montreal, and sales are reported at 78c. afloat. New stock is worth 69c. per bushel. They are quoted here at 55c. north and west, and 61 to 62c. on the farmers' market.

American corn is quoted here at 40c. on track.

Bran and Shorts.

There is a big demand for these at Montreal where Manitoba bran is quoted at \$14 to \$14.50 and shorts at \$16 to \$17 per ton. City mills here sell bran at \$13 and shorts at \$16 in car lots f.o.b. Toronto.

Eggs and Poultry.

The Montreal egg market keeps firm, though prices are considered too high for export. Buyers there complain that too many eggs are offering. Prices for choice selected are 14½ to 15c. for export lots and 16c. for small quantities. Supplies of fresh stock are more liberal here, but the market is steady at 13 to 14c. for good stock and 14c. for extra choice. On the Toronto farmers' market new-laid eggs bring 14 to 16c. per dozen.

Though there is a little more demand here for poultry because of the Exhibition there will not be much exporting till cool weather comes. On the Toronto farmers' market chickens fetch 40 to 90c. and ducks 60 to 90c. per pair, and turkeys 10 to 12c. per lb.

Potatoes.

These are coming forward in none too large quantities to supply the demand yet. Prices are a little lower owing to large production. Prices are 60 to 70c. per bag on the local market here.

Fruit.

As reported some time ago, peaches will be a short crop. The Ontario apple crop will, on good authority, only be a half one. The supply has been none too plentiful on the market here. Apples bring 15 to 25c. per basket, or \$1.25 to \$2 per barrel. Crawford peaches fetch \$1 to \$1.45 per basket for the best, and 75c. to \$1.15 for medium. Plums bring 25 to 60c., pears 40 to 50c., and grapes 25 to 60c. per basket.

Hay and Straw.

Cars of baled hay on track here are quoted at \$7 to \$8.50, and baled straw at \$4 to \$5 per ton. On the Toronto farmers' market new hay brings \$9 to \$10, sheaf straw \$7, and loose straw \$4 to \$5 per ton.

Clover and Timothy Seed.

On the farmers' market here red clover seed brings \$4 to \$4.50; alsike, \$3.50 to \$4.50; white clover, \$7 to \$8; and timothy seed, \$1.60 to \$1.75 per bushel.

Cheese.

The cheese markets seem to be advancing with a rush, and the outlook continues strong. At the local markets this week as high as 11 9/16c. has been reached, with a number of sales at 11 to 11 ¼c. per lb. Buyers are beginning to realize that stocks are short, and that they will have to hustle to get their winter's stock. Exports are beginning to fall off considerably, and it looks now as if at the end of the season the total exports would not be any greater than last year. The long-continued drought, which is now pretty general all over the country, is having a great effect upon the milk supply, which is falling off very fast. There is every prospect that 12c. cheese is in sight, though it must always be remembered that when the price gets too high the demand decreases.

Butter.

The butter market also shows signs of a further advance. The best creameries are now getting 22c., and as high as 22½c. is reported at Montreal for fancy creamery. The advance has also reached the American markets, and on Monday at the Elgin, Ill., market 21c. was reached, which is a considerable advance over a few weeks ago. The creameries

are suffering from the shortage in milk supply and the make is falling off very fast. The market here is firm and outside holders are said to be asking more than dealers here care to pay. Choice creamery prints sell at 23 to 24c. and tubs at 20 to 22c. The best dairy tubs bring 16 to 18½c. and second grades 12 to 14c. wholesale. On the Toronto farmers' market lb. rolls bring 20 to 23c. per lb.

Wool.

Coarse wools are very dull but there is more local demand for medium fine wools at about 16c.; 13 to 14c. are the quotations for coarse grades.

Cattle.

The cattle situation on the whole shows little change over a week ago. The American markets have been fairly steady, though lower cables for American cattle are reported. At Buffalo on Tuesday the offerings were quite liberal, but the demand was fair at a shade lower prices. Trade was quiet on this market on Tuesday, with prices firm for market of good quality. The quality of the cattle offered was not good. Though there was a light run, there was more than was needed for the supply. Quotations for exporters were lower, owing to the scarcity of good cattle. The bulk of exporters sold at \$4.40 to \$4.85 per cwt.

Export Cattle.—Choice loads of heavy exporters brought \$4.75 to \$5, and light ones \$4.25 to \$4.60 per cwt.

Butchers' Cattle.—Choice picked lots of these, equal in quality to the best exporters, but not so heavy, sold at \$4.40 to \$4.50; good ones at \$3.60 to \$4, and medium at \$3.30 to \$3.50 per cwt.; inferior to common stuff bring \$2.50 to \$3.25 per cwt.

Stockers and Feeders.—The deliveries of stockers were light with prices inclined to be easier at \$2.50 to \$2.75 for inferior stock; \$3 to \$3.30 for medium to good, and \$3.40 to \$3.50 per cwt. for a few choice picked lots. Light feeders, weighing 900 to 1000 lbs. each, sold at \$3.60, and heavy ones, weighing 1100 to 1200 each, at \$4 to \$4.20 per cwt.

Milk Cows.—The bulk offered brought \$25 to \$45 each, and one extra good milker \$52.

Calves.—These are unchanged at \$4 to \$8 each.

Sheep and Lambs.

The deliveries of sheep were large on Tuesday with prices easier at \$3.50 to \$3.75 per cwt. for ewes, and \$2.75 to \$3 per cwt. for bucks. The lambs offered were of better quality with prices firmer at \$4 to \$4.35 per cwt., or \$3 to \$3.50 each.

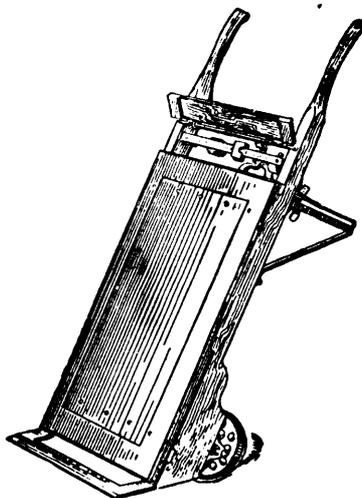
Every Merchant and Farmer

Should own a

Parsell Truck SCALE combining a first-class warehouse truck with a fine 800 Canadian Standard Scale.

It has "caught on" splendidly, and is going like "hot cakes."

WILL
SAVE ITS
COST
IN
NO
TIME.



For descriptive circular and full information,

THE ST. MARYS
TRUCK SCALE
CO.

St. Marys, Ont.

Hogs.

There has been a decided drop in hogs, and the highest price on Tuesday was \$5 per cwt. for choice select bacon hogs. Thick and light fat hogs sold at \$4.50 per cwt. and the bulk of the unculled car lots brought \$4.87½ per cwt. Essex and Kent corn fed hogs bring \$4.50 per cwt. There are too many thin, skinny hogs coming forward.

Big Sister (shouting to Bobbie): Bahbee! You're wanted to do an errand. Bobby (shouting back): Tell mother I can't do it now. I'm busy. Big Sister: It's not mother who wants you; it's father. Bobby (hastily): All right. Tell him I'm coming.

Mrs. Ankshus: Doctor, how is my husband this morning? Dr. Nonuthyng (impressively): He is a very sick man. "Oh, doctor, you don't think—" "Rest assured, my dear madam, that my treatment will straighten him out in less than a week."

There is a progressive justice of the peace in Clayton, Mich., who believes in advertising for business. He keeps an announcement standing in his local newspaper which reads:

If a man's in love,
That's his business.
If a girl's in love,
That's her business.
If they contemplate matrimony,
That's my business.
I always reserve the right to kiss the bride. Terms liberal. Time given if desired. Wood taken in part payment.
Thomas Tall,
Justice of the Peace.

Rutherford, Marshall & Co.

WHOLESALE PRODUCE AND
COMMISSION MERCHANTS

And Dealers in Butter, Eggs, Cheese, Poultry, Lard, Dried Apples, Hams, Bacon, Comb Honey, Etc.

We purchase outright or handle on commission.
When you have anything to offer in any of above lines write us.

68 FRONT STREET EAST, - TORONTO, ONT.



THE 'Toronto' Incubator

is the best machine built for hatching Chickens, Ducks, or any other eggs. It is used on all the largest poultry-raising establishments in Canada.

Send for Catalogue and learn all about it—it is free. Address—

T. A. WILLITTS,
514 Dundas Street, TORONTO, Ont.

FREEMAN'S THREE-PLY READY ROOFING

... EASILY APPLIED ...

Great Reduction in Prices. Send for Price List, etc

Parliament Buildings, Toronto,
October 20th, 1898.

THE W. A. FREEMAN Co., 57 Ferguson Ave., South,
Hamilton, Ontario:

Gentlemen,—Nine years ago I purchased from you a large quantity of material known as Freeman's Ready Roofing, with which I roofed the north half of my barn and two sheds, 66 x 20 each. This year we re-painted this roof and found it in excellent condition. A shingle roof put on part of the barns two years before was badly in need of repair. I shall hereafter use your ready roofing on all my out-buildings.

Yours truly,
(Signed) W. F. HODSON

To the FARMERS of this Canada of Ours:

WE heartily thank you for the liberal and increased patronage which has made the past year a record breaker in our business.

The Dominion Report of Mineral Production for 1898 shows that the farmers and stockmen of Canada used during the year

MORE QUEENSTON CEMENT.....

than the combined output of all other Canadian manufacturers of Natural Rock Cement.

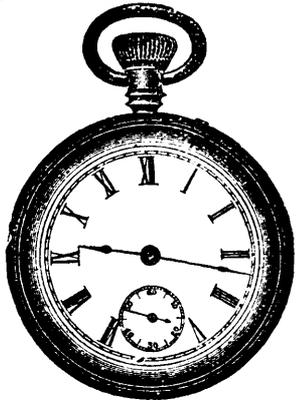
Ask for prices, or for estimate of cost of any kind of concrete work.

OUR SYSTEM OF VENTILATION

is being adopted by the leading agriculturists of Canada and the United States. Fully covered by letters patent, but to our patrons we make no charge.

Write for pamphlet containing full information.

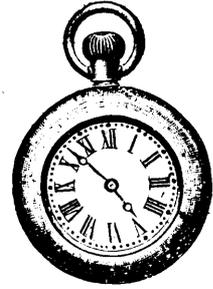
ISAAC USHER & SON
QUEENSTON, ONTARIO



Gents' Nickel-plated, Stem-winder, American Movement Watch. **Free for Selling 30 Packages.**

FREE

All these beautiful articles and many more are **FREE** to anyone who will assist us to introduce our new preparation,

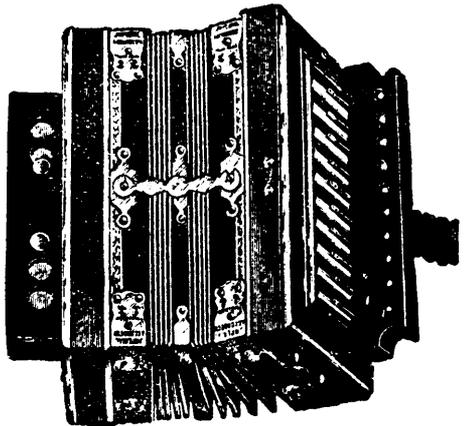


Ladies' Nickel Case Stem-winder Swiss Watch. **Free for Selling 36 Packages.**

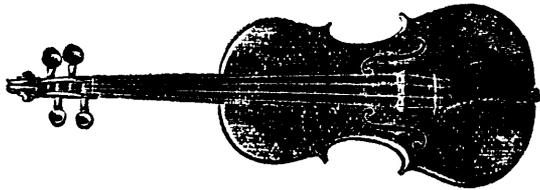
PERFUMED

Royal Lavender Blue

This Blue is for laundry purposes, and is put up in an entirely new form. It is the most convenient, purest and cheapest Blue in the market. Every 10 cent package contains sufficient Blue to do an ordinary family for about four months.



Ten-key Ebonized Accordeon, Fine instrument. **Free for Selling 30 Packages.**

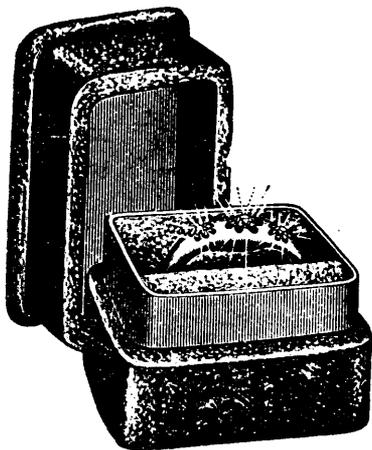


Violin and Box. **Free for Selling 24 Packages.**

**WE
POSITIVELY
GUARANTEE**

that this Blue will not streak, speck or settle. Clothes may be left in soak over night, without injury to the most delicate fabrics, and when ironed will impart a pleasing odor.

We require the services of agents in all parts of the country, to whom valuable premiums will be given.



Solid GOLD RING, with REAL GARNETS and Pearls, in plush case. **Free for Selling 24 Packages.**

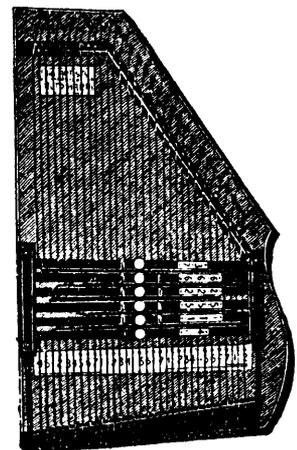
**NO MONEY IS
REQUIRED**

Send your name and address and we will send you a number of packages to sell for us at 10 cents per package. When sold return money and we will send the premium you select.

Remember we are sending you only a **first-class article and something that is used by every housekeeper.**

Every one will buy a trial package, and when used cannot fail to recommend it to their friends. This makes selling easy.

Write at once, we will then forward you goods and big premium list. Always write name and address very plainly. Mention this paper.



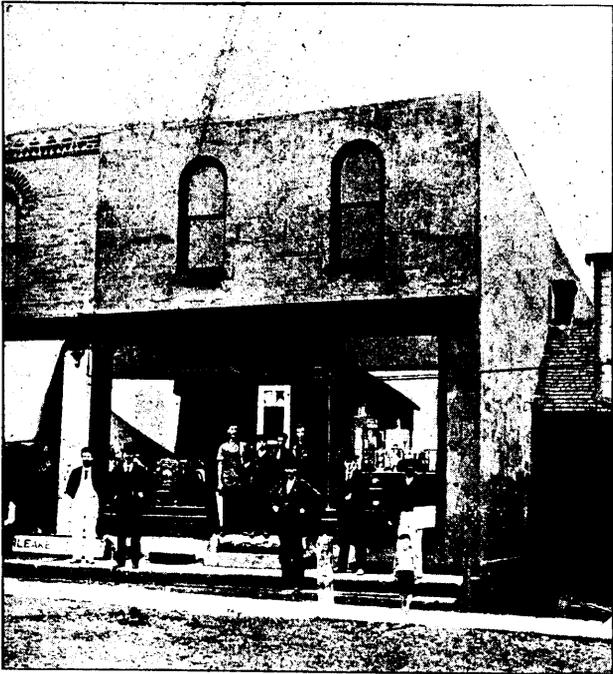
This Fine Autoharp Free for Selling 30 Packages.

Toronto Chemical Company

TORONTO

Thorold Cement

Replaces Timber, Brick and other costly materials in the construction of modern stock barns, fine residences, etc. There are hundreds of magnificent and costly structures in the Dominion built during the last fifty years with **Thorold Cement**, all in a state of perfect preservation. The cost of erecting structures with **Thorold Cement** is considerably below that of other materials.



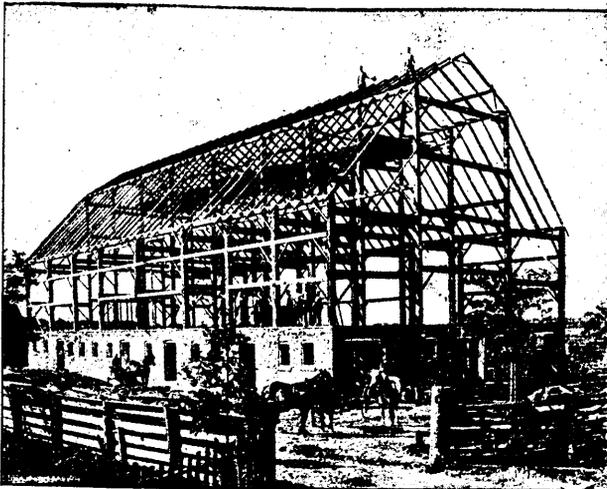
Concrete Store of R. Anderson, Hardware Merchant, Atwood, Ont.

Built from foundation to roof in 1898 with Thorold Cement.



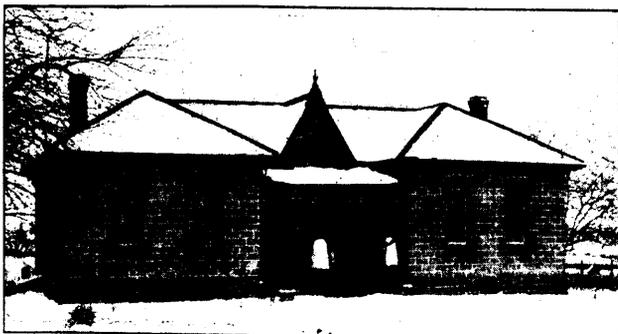
Barn of Wm. Patton, South Cayuga, Ont.

Size of Basement Walls, 36x60x9 feet. Built with Thorold Cement.



Barn of Beswetherick Bros., near Hagersville, Ont.

Size, 60x100 feet. Floors for horses and cattle were put in this barn with Thorold Cement.



Concrete Residence of Joseph Harris, near Kerwood, Ont.

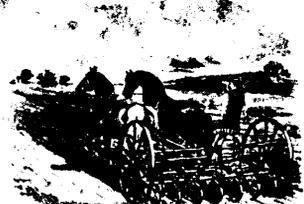
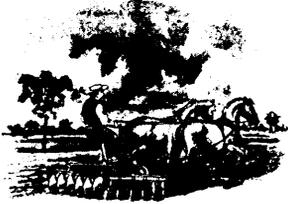
Built with Thorold Cement in 1896.

If you contemplate the building of a House, Barn, Hen House, Pig Pens, Cement Floors, etc., etc., write us your requirements and we will cheerfully furnish full information and estimates. Pamphlet sent free on application.

Estate of JOHN BATTLE

Thorold, Ontario

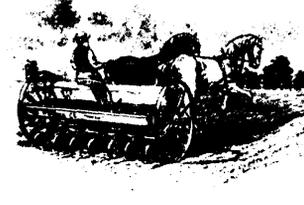
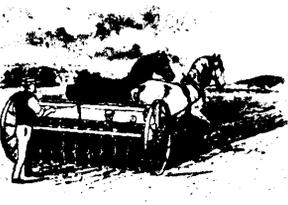
THE **NOXON CO** LIMITED



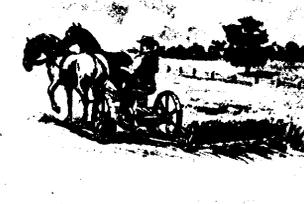
**CULTIVATING
SEEDING**



**HAY MAKING
AND
HARVESTING**



MACHINES
The
NOXON CO
LIMITED



ONT. INGERSOLL CAN.

